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L6 3811 SEA FILE=REGISTRY ABB=ON PLU=ON (LI(L)P(L)O(L)(TI OR V
OR CR OR MN OR FE OR CO OR NI OR CU OR ZR OR NB OR MO OR
RU OR AG OR TA OR W OR PT OR AU))/EL5
L7 1802 SEA FILE=REGISTRY ABB=ON PLU=ON L6 NOT O4P
L10 291 SEA FILE=REGISTRY ABB=ON PLU=ON L7 AND TI5/CI
L11 165 SEA FILE=HCAPLUS ABB=ON PLU=ON L10
L12 54 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 AND ?ELECTROLYT?
L13 53 SEA FILE=REGISTRY ABB=ON PLU=ON L10 AND 2-7/LI
L14 46 SEA FILE=REGISTRY ABB=ON PLU=ON L13 AND 3.5-8/O
L15 46 SEA FILE=REGISTRY ABB=ON PLU=ON L14 AND 0.01-1/M
L16 245 SEA FILE=REGISTRY ABB=ON PLU=ON L10 NOT L15
L17 153 SEA FILE=HCAPLUS ABB=ON PLU=ON L16
L18 49 SEA FILE=HCAPLUS ABB=ON PLU=ON L17 AND ?ELECTROLYT?
L19 54 SEA FILE=HCAPLUS ABB=ON PLU=ON L12 OR L18
L20 40 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 AND (1840-2003)/PRY,AY
,PY

=> d 120 1-40 ibib ed abs hitstr hitind

L20 ANSWER 1 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:675612 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 147:98643

TITLE: Electrodes comprising mixed active particles

INVENTOR(S): Barker, Jeremy

PATENT ASSIGNEE(S): UK

SOURCE: U.S. Pat. Appl. Publ., 37pp., Cont.-in-part of
U.S. Ser. No. 381,602.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20070141468	A1	20070621	US 2007-676707	20070220
			<--	
US 20040197654	A1	20041007	US 2003-406890	20030403
			<--	
US 7041239	B2	20060509		
US 20060194112	A1	20060831	US 2006-381602	20060504
			<--	
WO 2008103666	A2	20080828	WO 2008-US54292	20080219
W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRIORITY APPLN. INFO.: US 2003-406890 A1 20030403

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US 2006-381602 A2 20060504

US 2007-676707 A 20070220

ED Entered STIN: 22 Jun 2007

AB Disclosed is a battery containing a first electrode and a second electrode, and an electrolyte for transferring ionic charge-carriers there between, wherein the first electrode contains a first electrode active material represented by the formula $A_2eM_4kM_5mM_6nM_7oOg$, and at least one second electrode active material selected from the group consisting of active materials represented by the formula $AlaMlb(XY_4)cZd$, active materials represented by the formula A_3hMniO_4 , and mixts. thereof.

IT 610321-60-3P
(electrodes comprising mixed active particles)

RN 610321-60-3 HCAPLUS

CN Aluminum cobalt iron lithium magnesium fluoride metaphosphate oxide
(Al_{10.02}Co_{0.8}Fe_{0.1}LiMg_{0.05}F_{0.02}(PO₃)_{00.98}) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.98	17778-80-2
O3P	1	15389-19-2
F	0.02	14762-94-8
Co	0.8	7440-48-4
Mg	0.05	7439-95-4
Li	1	7439-93-2
Fe	0.1	7439-89-6
Al	0.02	7429-90-5

INCL 429231100; 429224000; 429231300

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 49

IT 12162-92-4P, Lithium vanadium oxide (LiV2O5) 12190-79-3P, Cobalt lithium oxide (CoLiO2) 12527-46-7P, Copper lithium oxide (CuLi2O2) 84159-18-2P, Lithium vanadium phosphate Li3V2(PO4)3 143623-49-8P, Cobalt lithium nickel oxide (Co_{0.25}LiNi_{0.75}O2) 179802-96-1P, Cobalt lithium manganese nickel oxide (Co_{0.2}LiMn_{0.1}Ni_{0.7}O2) 619321-60-3P 632286-77-2P, Iron lithium magnesium phosphate Fe_{0.9}LiMg_{0.1}PO4 643752-34-5P, Iron lithium magnesium phosphate (Fe_{0.95}LiMg_{0.05}(PO4)) 942263-50-5P 942263-51-6P
(electrodes comprising mixed active particles)

L20 ANSWER 2 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:545195 HCAPLUS Full-text

DOCUMENT NUMBER: 143:81020

TITLE: Lithium battery showing both high electric potential and lithium intercalation capacity.
Jouanneau-Si Larbi, Severine; Le Cras, Frederic; Bourbon, Carole; Gauthier, Gilles

INVENTOR(S):

PATENT ASSIGNEE(S): Commissariat a l'Energie Atomique, Fr.

SOURCE: Eur. Pat. Appl., 6 pp.
CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 1544930	A2	20050622	EP 2004-354039	20041202
			<--	
EP 1544930	A3	20070725		
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,			
	PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU,			
	PL, SK, BA, HR, IS, YU			
FR 2864348	A1	20050624	FR 2003-14865	20031218
			<--	
FR 2864348	B1	20060310		
US 20050136331	A1	20050623	US 2004-998985	20041130
			<--	
JP 2005183395	A	20050707	JP 2004-368132	20041220
			<--	
CN 1641915	A	20050720	CN 2004-10102151	20041220
			<--	
PRIORITY APPLN. INFO.:			FR 2003-14865	A 20031218
			<--	

ED Entered STN: 24 Jun 2005

AB A lithium battery consists of at least one first electrode consisting of active material into which the Li⁺ cations are able to be inserted, a second electrode, and an electrolyte. The active material in the first electrode consists of a condensed linear composition possessing at least two tetrahedra, resp. of type A₀4 and A'₀4, linked by one common oxygen. An ion M₂⁺ of a transition metal of oxidation state +2 and chosen from between Ni²⁺, Co²⁺, Mn²⁺, Fe²⁺, and Ti²⁺ is inserted into the condensed linear composition and the ratio between the number of Li⁺ cations which can be inserted into the active material and the number of transition metal M₂⁺ ions is strictly greater than 1. A and A' are chosen from between P⁵⁺, Si⁴⁺, Al³⁺, S⁶⁺, Ge⁴⁺, and B³⁺. One possible active material is Li_xB₂M₂Z₂(A₂O₇)_e(A'₀O₃)_f, where X represents at least one alkali metal at an oxidation state of 1⁺ chosen from among Li⁺, Na⁺, K⁺, and M represents at least one transition metal of oxidation state 2⁺ chosen from among Ni²⁺, Co²⁺, Mn²⁺, Fe²⁺, and Ti²⁺, and Z represents at least one transition metal chosen from the group Cu⁺, Ag⁺, Mg²⁺, Ca²⁺, Sr²⁺, Zn²⁺, V²⁺, Cu²⁺, Al³⁺, Ti³⁺, Cr³⁺, Fe³⁺, Mn³⁺, Ga³⁺, V³⁺, Ge³⁺, Sn³⁺, Mo³⁺, Ti⁴⁺, V⁴⁺, V⁵⁺, Ta⁵⁺, Nb⁵⁺ and Mo⁶⁺, the chemical elements O, S, F, and Cl, and a grouping of type A₀4, and a₁ and b and d₂0, and at least e or f>0. A⁺ is a cation chosen from P⁵⁺, Si⁴⁺, Al³⁺, S⁶⁺, Ge⁴⁺, B³⁺.

IT 855205-84-4P

(carbon supported; lithium battery showing both high elec. potential and lithium intercalation capacity)

RN 855205-84-4 HCAPLUS

CN Lithium nickel (diphosphate) metaphosphate (Li₃Ni(P₂O₇)(P₃O₃)₂) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
O3P	2	15389-19-2
O7P2	1	14000-31-8
Ni	1	7440-02-0
Li	3	7439-93-2

IC ICM H01M004-50

ICS H01M004-52

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 49

IT Polar solvents

(aprotic, electrolyte solvents; lithium battery showing both high elec. potential and lithium intercalation capacity)

IT 855205-84-4P
(carbon supported; lithium battery showing both high elec.
potential and lithium intercalation capacity)

IT 7439-93-2D, Lithium, salts
(electrolyte; lithium battery showing both high elec.
potential and lithium intercalation capacity)

L20 ANSWER 3 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:409837 HCAPLUS Full-text
DOCUMENT NUMBER: 142:433175
TITLE: Electrode active mass for secondary nonaqueous
electrolyte battery, its manufacture, and
the battery
INVENTOR(S): Okada, Shigeto; Yamaki, Jun-ichi; Okazaki,
Yasunori; Takebe, Hiromichi
PATENT ASSIGNEE(S): Toyota Jidosha Kabushiki Kaisha, Japan
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005043654	A1	20050512	WO 2004-JP16506	20041101
<p>W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW</p> <p>RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG</p>				
JP 2005158673	A	20050616	JP 2004-84822	20040323
CA 2543711	A1	20050512	CA 2004-2543711	20041101
EP 1684370	A1	20060726	EP 2004-799529	20041101
<p>R: DE, FR, GB</p>				
CN 1875506	A	20061206	CN 2004-80032286	20041101
US 20060194113	A1	20060831	US 2006-413168	20060428
KR 808124	B1	20080229	KR 2006-710676	20060530
PRIORITY APPLN. INFO.:			JP 2003-373359	A 20031031
			JP 2004-84822	A 20040323
			WO 2004-JP16506	W 20041101

ED Entered STN: 13 May 2005

AB The active mass mainly contains an amorphous metal composite phosphate:
 $AxM(PO_4)y$ [A = alkali metal; M = transition metal(s); $x = 0-2$; and $0 < y \leq 2$];
 and is manufactured by preparing a mixture which contains an alkali metal
 salt, a transition metal oxide, and a P compound; and rapid-solidifying the
 mixture from its melt state; or by amorphizing the above metal composite
 phosphate. The battery has a cathode, containing the above active mass, an
 anode, containing an alkali metal-intercalating material and a non-aq. or solid
 electrolyte.

IT 223571-46-8P, Iron lithium phosphorus oxide
 (compos. and manufacture of cathode active mass containing transition metal
 composite phosphates for secondary batteries)

RN 223571-46-8 HCAPLUS

CN Iron lithium phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Li	x	7439-93-2
Fe	x	7439-89-6

IC ICM H01M004-58
 ICS H01M004-02; H01M010-40; C01B025-45

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 15365-14-7P, Iron lithium phosphate (FeLiPO₄) 223571-46-8P,
 Iron lithium phosphorus oxide
 (compos. and manufacture of cathode active mass containing transition metal
 composite phosphates for secondary batteries)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE
 RE FORMAT

L20 ANSWER 4 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:906086 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 141:382165

TITLE: Solid electrolyte and total solid
 secondary battery containing the
 electrolyte

INVENTOR(S): Ugaji, Masaya; Mino, Shinji; Shibano, Yasuyuki;
 Ito, Shuji

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: PCT Int. Appl., 41 pp.
 CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004093236	A1	20041028	WO 2004-JP5424	20040415

<--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,
 CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
 GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR,
 KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
 MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,
 SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
 VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE,
 DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT,
 RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
 ML, MR, NE, SN, TD, TG

JP 2004335455 A 20041125 JP 2004-119042 20040414
 <--

JP 3690684 B2 20050831
 EP 1630893 A1 20060301 EP 2004-727754 20040415
 <--

R: DE, FR, GB
 CN 1751409 A 20060322 CN 2004-80004511 20040415
 <--

US 20060216611 A1 20060928 US 2005-551935 20051004
 <--

PRIORITY APPLN. INFO.: JP 2003-113850 A 20030418
 <--
 WO 2004-JP5424 W 20040415

ED Entered STN: 29 Oct 2004

AB The electrolyte, comprising Li, O, P and a transition metal element, is represented by Li_xSTyO_z (T = transition metal; x = 2-7; y = 0.01-1; and z = 3.5-8). The battery has the above electrolyte between a cathode and an anode.

IT 782495-23-2, Lithium titanium metaphosphate oxide
 (Li_{2.8}Ti_{0.2}(PO₃)_{0.9}) 782495-24-3, Lithium vanadium
 metaphosphate oxide (Li_{2.8}VO₂(PO₃)_{0.9}) 782495-25-4,
 Chromium lithium metaphosphate oxide (Cr_{0.2}Li_{2.8}(PO₃)_{0.9})
 782495-26-5, Lithium manganese metaphosphate oxide
 (Li_{2.8}Mn_{0.2}(PO₃)_{0.9}) 782495-27-6, Iron lithium
 metaphosphate oxide (Fe_{0.2}Li_{2.8}(PO₃)_{0.9}) 782495-28-7,
 Cobalt lithium metaphosphate oxide (Co_{0.2}Li_{2.8}(PO₃)_{0.9})
 782495-29-8, Lithium nickel metaphosphate oxide
 (Li_{2.8}Ni_{0.2}(PO₃)_{0.9}) 782495-30-1, Copper lithium
 metaphosphate oxide (Cu_{0.2}Li_{2.8}(PO₃)_{0.9}) 782495-31-2,
 Lithium zirconium metaphosphate oxide (Li_{2.8}Zr_{0.2}(PO₃)_{0.9})
 782495-32-3, Lithium niobium metaphosphate oxide
 (Li_{2.8}Nb_{0.2}(PO₃)_{0.9}) 782495-33-4, Lithium molybdenum
 metaphosphate oxide (Li_{2.8}Mo_{0.2}(PO₃)_{0.9}) 782495-34-5,
 Lithium ruthenium metaphosphate oxide (Li_{2.8}Ru_{0.2}(PO₃)_{0.9})
 782495-35-6, Lithium silver metaphosphate oxide
 (Li_{2.8}Ag_{0.2}(PO₃)_{0.9}) 782495-36-7, Lithium tantalum
 metaphosphate oxide (Li_{2.8}Ta_{0.2}(PO₃)_{0.9}) 782495-37-8,
 Lithium tungsten metaphosphate oxide (Li_{2.8}W_{0.2}(PO₃)_{0.9})
 782495-38-9, Lithium platinum metaphosphate oxide
 (Li_{2.8}Pt_{0.2}(PO₃)_{0.9}) 782495-39-0, Gold lithium
 metaphosphate oxide (Au_{0.2}Li_{2.8}(PO₃)_{0.9}) 782495-41-4,
 Lithium tungsten metaphosphate oxide (Li_{2.8}W_{0.01}(PO₃)_{0.9})
 782495-42-5, Lithium tungsten metaphosphate oxide
 (Li_{2.8}W_{0.05}(PO₃)_{0.9}) 782495-43-6, Lithium tungsten
 metaphosphate oxide (Li_{2.8}W_{0.1}(PO₃)_{0.9}) 782495-44-7,
 Lithium tungsten metaphosphate oxide (Li_{2.8}W_{0.5}(PO₃)_{0.9})
 782495-45-8, Lithium tungsten metaphosphate oxide
 (Li_{2.8}W_{0.52}(PO₃)_{0.9}) 782495-46-9, Lithium tungsten
 metaphosphate oxide (Li_{2.8}W_{0.6}(PO₃)_{0.9})

(solid electrolytes containing lithium transition metal
 phosphorus oxides for secondary batteries)

RN 782495-23-2 HCAPLUS

CN Lithium titanium metaphosphate oxide (Li_{2.8}Ti_{0.2}(PO₃)_{0.9}) (CA INDEX
 NAME)

10/551,935

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Ti	0.2	7440-32-6
Li	2.8	7439-93-2

RN 782495-24-3 HCAPLUS

CN Lithium vanadium metaphosphate oxide (Li2.8V0.2(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
V	0.2	7440-62-2
Li	2.8	7439-93-2

RN 782495-25-4 HCAPLUS

CN Chromium lithium metaphosphate oxide (Cr0.2Li2.8(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Cr	0.2	7440-47-3
Li	2.8	7439-93-2

RN 782495-26-5 HCAPLUS

CN Lithium manganese metaphosphate oxide (Li2.8Mn0.2(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Mn	0.2	7439-96-5
Li	2.8	7439-93-2

RN 782495-27-6 HCAPLUS

CN Iron lithium metaphosphate oxide (Fe0.2Li2.8(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Li	2.8	7439-93-2
Fe	0.2	7439-89-6

RN 782495-28-7 HCAPLUS

CN Cobalt lithium metaphosphate oxide (Co0.2Li2.8(PO3)O0.9) (CA INDEX NAME)

10/551,935

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Co	0.2	7440-48-4
Li	2.8	7439-93-2

RN 782495-29-8 HCAPLUS

CN Lithium nickel metaphosphate oxide (Li2.8Ni0.2(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Ni	0.2	7440-02-0
Li	2.8	7439-93-2

RN 782495-30-1 HCAPLUS

CN Copper lithium metaphosphate oxide (Cu0.2Li2.8(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Cu	0.2	7440-50-8
Li	2.8	7439-93-2

RN 782495-31-2 HCAPLUS

CN Lithium zirconium metaphosphate oxide (Li2.8Zr0.2(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Zr	0.2	7440-67-7
Li	2.8	7439-93-2

RN 782495-32-3 HCAPLUS

CN Lithium niobium metaphosphate oxide (Li2.8Nb0.2(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Nb	0.2	7440-03-1
Li	2.8	7439-93-2

RN 782495-33-4 HCAPLUS

CN Lithium molybdenum metaphosphate oxide (Li2.8Mo0.2(PO3)O0.9) (CA INDEX NAME)

10/551,935

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Mo	0.2	7439-98-7
Li	2.8	7439-93-2

RN 782495-34-5 HCAPLUS

CN Lithium ruthenium metaphosphate oxide (Li2.8Ru0.2(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Ru	0.2	7440-18-8
Li	2.8	7439-93-2

RN 782495-35-6 HCAPLUS

CN Lithium silver metaphosphate oxide (Li2.8Ag0.2(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Ag	0.2	7440-22-4
Li	2.8	7439-93-2

RN 782495-36-7 HCAPLUS

CN Lithium tantalum metaphosphate oxide (Li2.8Ta0.2(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Ta	0.2	7440-25-7
Li	2.8	7439-93-2

RN 782495-37-8 HCAPLUS

CN Lithium tungsten metaphosphate oxide (Li2.8W0.2(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
W	0.2	7440-33-7
Li	2.8	7439-93-2

RN 782495-38-9 HCAPLUS

CN Lithium platinum metaphosphate oxide (Li2.8Pt0.2(PO3)O0.9) (CA INDEX NAME)

10/551,935

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Pt	0.2	7440-06-4
Li	2.8	7439-93-2

RN 782495-39-0 HCAPLUS

CN Gold lithium metaphosphate oxide (Au0.2Li2.8(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Au	0.2	7440-57-5
Li	2.8	7439-93-2

RN 782495-41-4 HCAPLUS

CN Lithium tungsten metaphosphate oxide (Li2.8W0.01(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
W	0.01	7440-33-7
Li	2.8	7439-93-2

RN 782495-42-5 HCAPLUS

CN Lithium tungsten metaphosphate oxide (Li2.8W0.05(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
W	0.05	7440-33-7
Li	2.8	7439-93-2

RN 782495-43-6 HCAPLUS

CN Lithium tungsten metaphosphate oxide (Li2.8W0.1(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
W	0.1	7440-33-7
Li	2.8	7439-93-2

RN 782495-44-7 HCAPLUS

CN Lithium tungsten metaphosphate oxide (Li2.8W0.5(PO3)O0.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
W	0.5	7440-33-7
Li	2.8	7439-93-2

RN 782495-45-8 HCAPLUS

CN Lithium tungsten metaphosphate oxide (Li₂.8W_{0.52}(PO₃)O_{0.9}) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
W	0.52	7440-33-7
Li	2.8	7439-93-2

RN 782495-46-9 HCAPLUS

CN Lithium tungsten metaphosphate oxide (Li₂.8W_{0.6}(PO₃)O_{0.9}) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
W	0.6	7440-33-7
Li	2.8	7439-93-2

IC ICM H01M010-36

ICS H01B001-06

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary battery solid electrolyte lithium transition metal phosphorus oxide

IT Battery electrolytes

Secondary batteries

(solid electrolytes containing lithium transition metal phosphorus oxides for secondary batteries)

IT 782495-70-9, Lithium tungsten oxide phosphate (Li₃.2W_{0.100}.4(PO₄))782495-72-1, Lithium tungsten oxide phosphate (Li₃.66W_{0.330}.32(PO₄))

(solid electrolytes containing lithium transition metal phosphorus oxides for secondary batteries)

IT 782495-67-4, Lithium tungsten oxide phosphate (Li₃.5W_{0.250}(PO₄))

(solid electrolytes containing lithium transition metal phosphorus oxides for secondary batteries)

IT 12190-79-3, Cobalt lithium oxide (CoLiO₂) 782495-23-2,Lithium titanium metaphosphate oxide (Li₂.8Ti_{0.2}(PO₃)O_{0.9})

782495-24-3, Lithium vanadium metaphosphate oxide

(Li₂.8V_{0.2}(PO₃)O_{0.9}) 782495-25-4, Chromium lithiummetaphosphate oxide (Cr_{0.2}Li_{2.8}(PO₃)O_{0.9}) 782495-26-5,Lithium manganese metaphosphate oxide (Li₂.8Mn_{0.2}(PO₃)O_{0.9})

782495-27-6, Iron lithium metaphosphate oxide

(Fe_{0.2}Li_{2.8}(PO₃)O_{0.9}) 782495-28-7, Cobalt lithiummetaphosphate oxide (Co_{0.2}Li_{2.8}(PO₃)O_{0.9}) 782495-29-8,Lithium nickel metaphosphate oxide (Li₂.8Ni_{0.2}(PO₃)O_{0.9})

782495-30-1, Copper lithium metaphosphate oxide

(Cu_{0.2}Li_{2.8}(PO₃)O_{0.9}) 782495-31-2, Lithium zirconium

metaphosphate oxide (Li₂.8Zr0.2(P03)00.9) 782495-32-3,
 Lithium niobium metaphosphate oxide (Li₂.8Nb0.2(P03)00.9)
 782495-33-4, Lithium molybdenum metaphosphate oxide
 (Li₂.8Mo0.2(P03)00.9) 782495-34-5, Lithium ruthenium
 metaphosphate oxide (Li₂.8Ru0.2(P03)00.9) 782495-35-6,
 Lithium silver metaphosphate oxide (Li₂.8Ag0.2(P03)00.9)
 782495-36-7, Lithium tantalum metaphosphate oxide
 (Li₂.8Ta0.2(P03)00.9) 782495-37-8, Lithium tungsten
 metaphosphate oxide (Li₂.8W0.2(P03)00.9) 782495-38-9,
 Lithium platinum metaphosphate oxide (Li₂.8Pt0.2(P03)00.9)
 782495-39-0, Gold lithium metaphosphate oxide
 (Au0.2Li₂.8(P03)00.9) 782495-40-3, Lithium metaphosphate oxide
 (Li₂.8(P03)00.9) 782495-41-4, Lithium tungsten metaphosphate
 oxide (Li₂.8W0.01(P03)00.9) 782495-42-5, Lithium tungsten
 metaphosphate oxide (Li₂.8W0.05(P03)00.9) 782495-43-6,
 Lithium tungsten metaphosphate oxide (Li₂.8W0.1(P03)00.9)
 782495-44-7, Lithium tungsten metaphosphate oxide
 (Li₂.8W0.5(P03)00.9) 782495-45-8, Lithium tungsten
 metaphosphate oxide (Li₂.8W0.52(P03)00.9) 782495-46-9,
 Lithium tungsten metaphosphate oxide (Li₂.8W0.6(P03)00.9)
 782495-47-0, Lithium vanadium oxide phosphate (Li₂.8V0.200.4(P04))
 782495-48-1, Chromium lithium oxide phosphate (Cr0.2Li₂.800.2(P04))
 782495-49-2, Lithium manganese oxide phosphate (Li₂.8Mn0.200.3(P04))
 782495-50-5, Iron lithium oxide phosphate (Fe0.2Li₂.800.17(P04))
 782495-51-6, Cobalt lithium oxide phosphate (Co0.2Li₂.800.17(P04))
 782495-52-7, Lithium nickel oxide phosphate (Li₂.8Ni0.200.1(P04))
 782495-53-8, Copper lithium oxide phosphate (Cu0.2Li₂.800.1(P04))
 782495-54-9, Lithium zirconium oxide phosphate (Li₂.8Zr0.200.3(P04))
 782495-55-0, Lithium niobium oxide phosphate (Li₂.8Nb0.200.4(P04))
 782495-56-1, Lithium molybdenum oxide phosphate (Li₂.8Mo0.200.5(P04))
 782495-57-2, Lithium silver phosphate (Li₂.8Ag0.2(P04)) 782495-58-3,
 Lithium tantalum oxide phosphate (Li₂.8Ta0.200.4(P04)) 782495-59-4,
 Lithium tungsten oxide phosphate (Li₂.8W0.200.5(P04)) 782495-60-7,
 Lithium titanium oxide phosphate (Li₄Ti0.250(P04)) 782495-61-8,
 Lithium vanadium oxide phosphate (Li₃.75V0.250(P04)) 782495-62-9,
 Chromium lithium oxide phosphate (Cr0.25Li₃.50(P04)) 782495-63-0,
 Lithium manganese oxide phosphate (Li₃.25Mn0.250(P04)) 782495-64-1,
 Lithium niobium oxide phosphate (Li₃.75Nb0.250(P04)) 782495-65-2,
 Lithium molybdenum oxide phosphate (Li₃.5Mo0.250(P04)) 782495-66-3,
 Lithium tantalum oxide phosphate (Li₃.75Ta0.250(P04)) 782495-69-6,
 Lithium tungsten oxide phosphate (Li₃.02W0.0100.04(P04))
 782495-74-3, Lithium tungsten oxide phosphate (Li₅W0.4(P04))
 782495-76-5, Lithium tungsten oxide phosphate (Li₇W2O8(P04))
 (solid electrolytes containing lithium transition metal
 phosphorus oxides for secondary batteries)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE
 RE FORMAT

L20 ANSWER 5 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:139847 HCAPLUS Full-text
 DOCUMENT NUMBER: 140:184700
 TITLE: Secondary lithium battery and its cathode
 INVENTOR(S): Tanjo, Yuji
 PATENT ASSIGNEE(S): Nissan Motor Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004055328	A	20040219	JP 2002-210958	20020719

PRIORITY APPLN. INFO.:	JP 2002-210958	20020719
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ED Entered STN: 20 Feb 2004

AB The battery has ≥ 1 Li containing multiple oxide cathodes, ≥ 1 Li intercalating carbonaceous anodes, separators between the cathodes and anodes, and a Li⁺ conducting electrolyte solution; where the cathode active mass is a Li containing multiple oxide, selected from Li Mn oxide, Li Ni oxide, Li Co oxide, Li Fe P oxide, and Li Mn P oxide and has average particle diameter ≤ 1 μ m. Preferably, the cathodes contain $\geq 20\%$ conductor and are 50-150 μ m thick.

IT 138758-08-4, Lithium manganese phosphorus oxide
223571-46-8, Iron lithium phosphorus oxide
(fine lithium containing multiple oxide particles with controlled particle size for secondary lithium battery cathodes)

RN 138758-08-4 HCAPLUS

CN Lithium manganese phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Mn	x	7439-96-5
Li	x	7439-93-2

RN 223571-46-8 HCAPLUS

CN Iron lithium phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Li	x	7439-93-2
Fe	x	7439-89-6

IC ICM H01M004-58

ICS H01M004-02; H01M004-62; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 12057-17-9, Lithium manganese oxide (LiMn2O4) 39300-70-4, Lithium nickel oxide 52627-24-4, Cobalt lithium oxide 138758-08-4, Lithium manganese phosphorus oxide 223571-46-8, Iron lithium phosphorus oxide
(fine lithium containing multiple oxide particles with controlled particle size for secondary lithium battery cathodes)

L20 ANSWER 6 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:98113 HCAPLUS Full-text

DOCUMENT NUMBER: 140:155565

TITLE: Lithium ion conductors showing high ionic conductivity at room temperatures

INVENTOR(S): Ishikawa, Yuichi; Fukui, Toshimi; Hori, Masanori
PATENT ASSIGNEE(S): Kansai Research Institute Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

DOCUMENT TYPE: CODEN: JKXXAF
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: Japanese
 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004039549	A	20040205	JP 2002-197531	20020705
			<--	
PRIORITY APPLN. INFO.:			JP 2002-197531	20020705
			<--	

ED Entered STN: 06 Feb 2004

AB The ion conductors, useful as solid electrolytes for secondary batteries, electrochromic devices, etc., comprise oxides containing Li, S, P, and Zr satisfying mol ratio of S/(S + P) 0.1-0.9, Li content (as Li₂O) 20-50 mol%, and Zr content (as ZrO₂) 10-50 mol%.

IT 651724-47-9P

(lithium ion conductors containing Li S P Zr oxides showing high ionic conductivity at room temps.)

RN 651724-47-9 HCAPLUS

CN Lithium phosphorus sulfur zirconium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
S	x	7704-34-9
Zr	x	7440-67-7
Li	x	7439-93-2

IC ICM H01M010-40

ICS C01G025-00; H01B001-06; H01B001-08

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 52

ST lithium sulfur phosphorus zirconium oxide ionic conductor; solid electrolyte electrochromic device secondary battery lithium

IT Electrochromic devices

Ionic conductors

Solid electrolytes

(lithium ion conductors containing Li S P Zr oxides showing high ionic conductivity at room temps.)

IT 651724-47-9P

(lithium ion conductors containing Li S P Zr oxides showing high ionic conductivity at room temps.)

L20 ANSWER 7 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:796193 HCAPLUS Full-text

DOCUMENT NUMBER: 139:310049

TITLE: Batteries comprising alkali-transition metal phosphates and preferred electrolytes

INVENTOR(S): Pugh, James; Saidi, Mohammed Y.; Huang, Haitao

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 24 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20030190527	A1	20031009	US 2002-116276	20020403
CA 2479790	A1	20031016	CA 2003-2479790	20030327
WO 2003085757	A1	20031016	WO 2003-US9634	20030327
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003224801	A1	20031020	AU 2003-224801	20030327
EP 1490917	A1	20041229	EP 2003-721492	20030327
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005522009	T	20050721	JP 2003-582838	20030327
CN 1650450	A	20050803	CN 2003-810033	20030327
US 20050181283	A1	20050818	US 2005-80605	20050315
PRIORITY APPLN. INFO.:				
			US 2002-116276	A 20020403
			WO 2003-US9634	W 20030327
ED Entered STN: 10 Oct 2003				
AB Lithium batteries comprising: (a) an electrode comprising a material $AaMb(XY_4)_cZd$, wherein (i) A is an alkali metal and $0 < a \leq 9$; (ii) M comprises a transition metal, and $1 \leq b \leq 3$; (iii) XY_4 is $X'O_4-x Y'x$, $X'O_4-yY'2y$, $X''S_4$, or mixts. thereof, where X' is P, As, Sb, Si, Ge, V, S, or mixts. thereof; X'' is P, As, Sb, Si, Ge, V, or mixts. thereof; Y' is halogen, S, N, or mixts. thereof; $0 \leq x \leq 3$; and $0 < y \leq 2$; and $0 < c \leq 3$; and (iv) Z is OH, halogen, or mixts. thereof, and $0 \leq d \leq 6$; and (b) a counter-electrode; and (c) an electrolyte comprising an alkyl and/or alkylene carbonate and a cyclic ester. Preferably, M addnl. comprises at least one non-transition metal. Preferred embodiments include those having an olivine structure, where $c = 1$, and those having a NASICON structure, where $c = 3$.				
IT 610321-55-6 610321-60-3 610754-69-3				
(batteries comprising alkali-transition metal phosphates and preferred electrolytes)				
RN 610321-55-6 HCAPLUS				
CN Cobalt iron lithium magnesium titanium fluoride metaphosphate oxide				
(Co0.8Fe0.1Li1.02Mg0.02Ti0.02F0.02(PO3)0.98) (CA INDEX NAME)				

Component	Ratio	Component Registry Number
O	0.98	17778-80-2

O3P		1		15389-19-2
F		0.02		14762-94-8
Co		0.8		7440-48-4
Ti		0.02		7440-32-6
Mg		0.02		7439-95-4
Li		1.02		7439-93-2
Fe		0.1		7439-89-6

RN 610321-60-3 HCAPLUS

CN Aluminum cobalt iron lithium magnesium fluoride metaphosphate oxide
(Al0.02Ca0.8Fe0.1LiMg0.05F0.02(PO3)O0.98) (CA INDEX NAME)

Component		Ratio		Component Registry Number
O		0.98		17778-80-2
O3P		1		15389-19-2
F		0.02		14762-94-8
Co		0.8		7440-48-4
Mg		0.05		7439-95-4
Li		1		7439-93-2
Fe		0.1		7439-89-6
Al		0.02		7429-90-5

RN 610754-69-3 HCAPLUS

CN Aluminum calcium cobalt iron lithium fluoride metaphosphate oxide
(Al0.02Ca0.05Co0.8Fe0.1LiF0.02(PO3)O0.98) (CA INDEX NAME)

Component		Ratio		Component Registry Number
O		0.98		17778-80-2
O3P		1		15389-19-2
F		0.02		14762-94-8
Ca		0.05		7440-70-2
Co		0.8		7440-48-4
Li		1		7439-93-2
Fe		0.1		7439-89-6
Al		0.02		7429-90-5

IC ICM H01M004-58

INCL 429231900; 429231950; 429221000; 429223000; 429231500; 429224000;
429231600CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 49

IT Battery cathodes

Battery electrolytes

(batteries comprising alkali-transition metal phosphates and
preferred electrolytes)

IT Chalcogenides

Oxides (inorganic), uses

(batteries comprising alkali-transition metal phosphates and
preferred electrolytes)

IT Carbonates, uses

(esters; batteries comprising alkali-transition metal phosphates
and preferred electrolytes)

IT Secondary batteries

(lithium; batteries comprising alkali-transition metal phosphates
and preferred electrolytes)IT 57-57-8, β -Propiolactone 96-48-0, γ -Butyrolactone

96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7,
 1,2-Propylene carbonate 502-44-3, ϵ -Caprolactone 542-28-9,
 δ -Valerolactone 616-38-6, Dimethyl carbonate 623-53-0, Ethyl
 methyl carbonate 2453-03-4, 1,3-Propylene carbonate 4427-90-1,
 1,5-Pentylene carbonate 4427-94-5, 1,4-Butylene carbonate
 4437-70-1, 2,3-Butylene carbonate 4437-85-8, 1,2-Butylene carbonate
 7440-44-0, Carbon, uses 7550-35-8, Lithium bromide (LiBr)
 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate
 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium
 tetrafluoroborate 14485-20-2, Lithium tetraphenylborate
 15365-14-7, Iron lithium phosphate FeLiPO_4 21324-40-3, Lithium
 hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate
 33454-82-9, Lithium triflate 90076-65-6 132843-44-8 610271-90-4
 610271-94-8 610272-06-5 610310-87-7 610310-88-8 610310-92-4
 610310-95-7 610310-97-9 610310-99-1 610311-00-7
 610321-55-6 610321-60-3 610754-69-3
 (batteries comprising alkali-transition metal phosphates and
 preferred electrolytes)
 IT 477779-87-6P, Sodium vanadium fluoride phosphate $\text{NaVF}(\text{PO}_4)$
 484040-01-9P, Iron lithium magnesium fluoride phosphate
 $\text{Fe}_0.9\text{Li}_{1.25}\text{Mg}_{0.1}\text{FO}_{0.25}(\text{PO}_4)$ 484040-22-4P, Lithium vanadium fluoride
 phosphate ($\text{Li}_6\text{V}_2\text{F}(\text{PO}_4)_3$) 484040-28-0P 610272-07-6P 610311-01-8P
 (batteries comprising alkali-transition metal phosphates and
 preferred electrolytes)

L20 ANSWER 8 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2002:807222 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 137:327378
 TITLE: Production of spinel-type lithium manganate.
 INVENTOR(S): Kamata, Tsuneyoshi; Numata, Koichi
 PATENT ASSIGNEE(S): Mitsui Mining and Smelting Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002308628	A	20021023	JP 2001-111751	20010410
			<--	
PRIORITY APPLN. INFO.:			JP 2001-111751	20010410
			<--	

ED Entered STN: 23 Oct 2002

AB The title process includes pulverizing electrolysis precipitated MnO_2 , neutralizing by NaOH or Na_2CO_3 to obtain electrolytic MnO_2 having $\text{pH} \geq 2$ and sp. surface area 50 m^2/g and P content 0.1-1 weight%, mixing the electrolytic MnO_2 with Li-containing raw material (e.g., Li_2CO_3 , LiNO_3 or LiOH) and a compound containing Mg, Al, Ni, Co, Fe, Cu, Zn, Ca, Si, P, Ti, Cr, Na, K, V and/or B (where 0.05-12.5 mol% Mn is substituted by those elements), and firing. The spinel-type Li manganate (partially substituted) can be used as cathode material of nonaq. electrolyte secondary batteries.

IT 333758-08-4P, Lithium manganese phosphorus oxide
 (spinel-type; production of spinel-type lithium manganate)
 RN 138758-08-4 HCAPLUS
 CN Lithium manganese phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component
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		Registry Number
O	x	17778-80-2
P	x	7723-14-0
Mn	x	7439-96-5
Li	x	7439-93-2
IC	ICM C01G045-00	
	ICS H01M004-02; H01M004-58; H01M010-40	
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology)	
	Section cross-reference(s): 49	
ST	spinel type lithium manganate prodn phosphorus content; partial substitution spinel type lithium manganate prodn phosphorus content; nonaq electrolyte secondary battery cathode material lithium manganate prodn	
IT	Secondary batteries (nonaq. electrolyte, cathode material of; production of spinel-type lithium manganate for)	
IT	61179-01-9P, Aluminum lithium manganese oxide 133782-19-1P, Lithium manganese vanadium oxide 138756-08-4P, Lithium manganese phosphorus oxide 153327-02-7P, Boron lithium manganese oxide 162684-16-4P, Lithium manganese nickel oxide 173525-03-6P, Lithium manganese sodium oxide 175786-46-6P, Lithium magnesium manganese oxide 187156-09-8P, Lithium manganese zinc oxide 191538-04-2P, Copper lithium manganese oxide 204450-96-4P, Chromium lithium manganese oxide 208394-04-1P, Lithium manganese titanium oxide 214536-41-1P, Cobalt lithium manganese oxide 245085-55-6P, Calcium lithium manganese oxide 252568-44-8P, Lithium manganese silicon oxide 273725-34-1P, Lithium manganese potassium oxide (spinel-type; production of spinel-type lithium manganate)	

L20 ANSWER 9 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:807221 HCAPLUS Full-text

DOCUMENT NUMBER: 137:327377

TITLE: Production of spinel-type lithium manganate.

INVENTOR(S): Kamata, Tsuneyoshi; Numata, Koichi

PATENT ASSIGNEE(S): Mitsui Mining and Smelting Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002308627	A	20021023	JP 2001-111690	20010410
			<--	
PRIORITY APPLN. INFO.:			JP 2001-111690	20010410
			<--	

ED Entered STN: 23 Oct 2002

AB The title process includes pulverizing electrolysis precipitated MnO₂, neutralizing by NaOH or NaCO₃ to obtain electrolytic MnO₂ having pH \geq 2 and sp. surface area 50 m²/g, mixing the electrolytic MnO₂ with Li-containing raw material (e.g., Li₂CO₃, LiNO₃ or LiOH) and a compound containing Mg, Al, Ni, Co, Fe, Cu, Zn, Ca, Si, P, Ti, Cr, Na, K, V and/or B (where 0.05-12.5 mol% Mn is substituted by those elements), and firing. The spinel-type Li manganate (partially substituted) can be used as cathode material of nonaq. electrolyte secondary batteries.

IT 138756-08-4P, Lithium manganese phosphorus oxide

(spinel-type; production of spinel-type lithium manganate)
 RN 138758-08-4 HCAPLUS
 CN Lithium manganese phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Mn	x	7439-96-5
Li	x	7439-93-2

IC ICM C01G045-00
 ICS H01M004-02; H01M004-58; H01M010-40
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 49
 ST spinel type lithium manganate prodn; partial substitution spinel type
 lithium manganate prodn; nonaq electrolyte secondary battery
 cathode material lithium manganate prodn
 IT Secondary batteries
 (nonaq. electrolyte, cathode material of; production of
 spinel-type lithium manganate for)
 IT 61179-01-9P, Aluminum lithium manganese oxide 133782-19-1P, Lithium
 manganese vanadium oxide 138758-08-4P, Lithium manganese
 phosphorus oxide 153327-02-7P, Boron lithium manganese oxide
 162684-16-4P, Lithium manganese nickel oxide 173525-03-6P, Lithium
 manganese sodium oxide 175786-46-6P, Lithium magnesium manganese
 oxide 187156-09-8P, Lithium manganese zinc oxide 191538-04-2P,
 Copper lithium manganese oxide 204450-96-4P, Chromium lithium
 manganese oxide 208394-04-1P, Lithium manganese titanium oxide
 214536-41-1P, Cobalt lithium manganese oxide 245085-55-6P, Calcium
 lithium manganese oxide 252568-44-8P, Lithium manganese silicon
 oxide 273725-34-1P, Lithium manganese potassium oxide
 (spinel-type; production of spinel-type lithium manganate)

L20 ANSWER 10 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:784083 HCAPLUS Full-text

DOCUMENT NUMBER: 138:273960

TITLE: Characteristics of lithium-ion-conducting
 composite polymer-glass secondary cell
 electrolytes

AUTHOR(S): Zhang, Xiang-Wu; Wang, Chunsheng; Appleby, A.
 John; Little, Frank E.

CORPORATE SOURCE: Texas Engineering Experiment Station, Center for
 Electrochemical Systems and Hydrogen Research,
 Texas A and M University, College Station, TX,
 77843-3402, USA

SOURCE: Journal of Power Sources (2002), 112(1),
 209-215

CODEN: JPSODZ; ISSN: 0378-7753

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 15 Oct 2002

AB A family of lithium-ion-conducting composite polymer-glass electrolytes
 containing the glass composition $14\text{Li}_2\text{O}-9\text{Al}_2\text{O}_3-38\text{TiO}_2-39\text{P}_2\text{O}_5$ (abbreviated as
 $(\text{LiAlTiP})_{\text{xOy}}$) with high ionic conductivity, an excellent electrochem.
 stability range, and high compatibility with lithium insertion anodes is
 described. An optimized composition has a room temperature conductivity of
 $1.7 \times 10^{-4} \text{ S cm}^{-1}$, an Li^+ transference number of 0.39, and an electrochem.

stability window to +5.1 V vs. Li/Li+. It also has good interfacial stability under both open-circuit and lithium metal plating-stripping conditions and provides good shelf-life.

IT 186088-00-6
 (polymer electrolytes in secondary lithium batteries
 containing glass compns. for improved conductivity)
 RN 186088-00-6 HCAPLUS
 CN Aluminum lithium phosphorus titanium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Ti	x	7440-32-6
Li	x	7439-93-2
Al	x	7429-90-5

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST secondary lithium battery composite polymer glass electrolyte
 characteristic

IT Battery electrolytes
 Secondary batteries
 (polymer electrolytes in secondary lithium batteries
 containing glass compns. for improved conductivity)

IT Polyoxymethylenes, uses
 (polymer electrolytes in secondary lithium batteries
 containing glass compns. for improved conductivity)

IT 7791-03-9, Lithium perchlorate 25322-68-3, Polyethylene oxide
 132843-44-8 186088-00-6
 (polymer electrolytes in secondary lithium batteries
 containing glass compns. for improved conductivity)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE
 RE FORMAT

L20 ANSWER 11 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:752479 HCAPLUS Full-text

DOCUMENT NUMBER: 137:281841

TITLE: Cathode active material for nonaqueous
 electrolyte secondary battery

INVENTOR(S): Morishima, Hideaki; Yamada, Shuji; Kanai, Hideyuki

PATENT ASSIGNEE(S): Kabushiki Kaisha Toshiba, Japan

SOURCE: Eur. Pat. Appl., 29 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1246290	A2	20021002	EP 2002-252168	20020326
			<--	
EP 1246290	A3	20031119		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,				
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
CA 2378278	A1	20020926	CA 2002-2378278	20020322
			<--	
US 20030054253	A1	20030320	US 2002-102705	20020322

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                                <--
US 6984470          B2      20060110
JP 2002358965      A        20021213      JP 2002-87051      20020326
                                <--
JP 3615196          B2      20050126
US 20060029865      A1      20060209      US 2005-244042      20051006
                                <--
PRIORITY APPLN. INFO.:      JP 2001-87038      A 20010326
                                <--
                                US 2002-102705      A3 20020322
                                <--

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ED Entered STN: 04 Oct 2002

AB The present invention provides a pos. electrode active material containing a lithium-containing composite metal oxide having a composition represented by: LiMgxMl-xPO_4 where M is at least one kind of an element selected from the group consisting of Co and Ni, and the molar ratio x is larger than 0.5 and smaller than 0.75, i.e., $0.5 < x < 0.75$.

IT 464172-19-8P 464172-22-3P 464172-25-6P
 464172-28-9P 464172-31-4P 464172-34-7P
 464172-37-0P 464172-39-2P 464172-42-7P
 464172-45-0P 464172-46-3P 464172-51-8P
 464172-54-1P 464172-57-4P

(cathode active material for nonaq. electrolyte secondary battery)

RN 464172-19-8 HCAPLUS

CN Cobalt lithium magnesium metaphosphate oxide silicate
 ($\text{Co}_0.9\text{LiMg}_{0.05}(\text{PO}_3)_{0.95}\text{O}_{0.75}(\text{SiO}_4)_{0.1}$) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.75	17778-80-2
O4Si	0.1	17181-37-2
O3P	0.95	15389-19-2
Co	0.9	7440-48-4
Mg	0.05	7439-95-4
Li	1	7439-93-2

RN 464172-22-3 HCAPLUS

CN Cobalt lithium vanadium metaphosphate oxide silicate
 ($\text{Co}_0.9\text{LiV}_{0.05}(\text{PO}_3)_{0.95}\text{O}_{0.75}(\text{SiO}_4)_{0.1}$) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.75	17778-80-2
O4Si	0.1	17181-37-2
O3P	0.95	15389-19-2
V	0.05	7440-62-2
Co	0.9	7440-48-4
Li	1	7439-93-2

RN 464172-25-6 HCAPLUS

CN Chromium cobalt lithium metaphosphate oxide silicate
 ($\text{Cr}_{0.05}\text{Co}_{0.9}\text{Li}(\text{PO}_3)_{0.95}\text{O}_{0.75}(\text{SiO}_4)_{0.1}$) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.75	17778-80-2

O4Si		0.1		17181-37-2
O3P		0.95		15389-19-2
Co		0.9		7440-48-4
Cr		0.05		7440-47-3
Li		1		7439-93-2

RN 464172-28-9 HCAPLUS

CN Cobalt lithium manganese metaphosphate oxide silicate
(Co_{0.9}LiMn_{0.05}(PO₃)_{0.95}O_{0.75}(SiO₄)_{0.1}) (CA INDEX NAME)

Component		Ratio		Component Registry Number
=====				
O		0.75		17778-80-2
O4Si		0.1		17181-37-2
O3P		0.95		15389-19-2
Co		0.9		7440-48-4
Mn		0.05		7439-96-5
Li		1		7439-93-2

RN 464172-31-4 HCAPLUS

CN Cobalt iron lithium metaphosphate oxide silicate
(Co_{0.9}Fe_{0.05}Li(PO₃)_{0.95}O_{0.75}(SiO₄)_{0.1}) (CA INDEX NAME)

Component		Ratio		Component Registry Number
=====				
O		0.75		17778-80-2
O4Si		0.1		17181-37-2
O3P		0.95		15389-19-2
Co		0.9		7440-48-4
Li		1		7439-93-2
Fe		0.05		7439-89-6

RN 464172-34-7 HCAPLUS

CN Cobalt copper lithium metaphosphate oxide silicate
(Co_{0.9}Cu_{0.05}Li(PO₃)_{0.95}O_{0.75}(SiO₄)_{0.1}) (CA INDEX NAME)

Component		Ratio		Component Registry Number
=====				
O		0.75		17778-80-2
O4Si		0.1		17181-37-2
O3P		0.95		15389-19-2
Cu		0.05		7440-50-8
Co		0.9		7440-48-4
Li		1		7439-93-2

RN 464172-37-0 HCAPLUS

CN Cobalt lithium zirconium metaphosphate oxide silicate
(Co_{0.9}LiZr_{0.05}(PO₃)_{0.95}O_{0.75}(SiO₄)_{0.1}) (CA INDEX NAME)

Component		Ratio		Component Registry Number
=====				
O		0.75		17778-80-2
O4Si		0.1		17181-37-2
O3P		0.95		15389-19-2
Zr		0.05		7440-67-7
Co		0.9		7440-48-4

Li | 1 | 7439-93-2

RN 464172-39-2 HCAPLUS

CN Lithium magnesium nickel metaphosphate oxide silicate
(LiMg0.05Ni0.9(PO3)0.95O0.75(SiO4)0.1) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.75	17778-80-2
O4Si	0.1	17181-37-2
O3P	0.95	15389-19-2
Ni	0.9	7440-02-0
Mg	0.05	7439-95-4
Li	1	7439-93-2

RN 464172-42-7 HCAPLUS

CN Lithium nickel vanadium metaphosphate oxide silicate
(LiNi0.9V0.05(PO3)0.95O0.75(SiO4)0.1) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.75	17778-80-2
O4Si	0.1	17181-37-2
O3P	0.95	15389-19-2
V	0.05	7440-62-2
Ni	0.9	7440-02-0
Li	1	7439-93-2

RN 464172-45-0 HCAPLUS

CN Chromium lithium nickel metaphosphate oxide silicate
(Cr0.05LiNi0.9(PO3)0.95O0.75(SiO4)0.1) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.75	17778-80-2
O4Si	0.1	17181-37-2
O3P	0.95	15389-19-2
Cr	0.05	7440-47-3
Ni	0.9	7440-02-0
Li	1	7439-93-2

RN 464172-48-3 HCAPLUS

CN Lithium manganese nickel metaphosphate oxide silicate
(LiMn0.05Ni0.9(PO3)0.95O0.75(SiO4)0.1) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.75	17778-80-2
O4Si	0.1	17181-37-2
O3P	0.95	15389-19-2
Ni	0.9	7440-02-0
Mn	0.05	7439-96-5
Li	1	7439-93-2

RN 464172-51-8 HCAPLUS

CN Iron lithium nickel metaphosphate oxide silicate

(Fe0.05LiNi0.9(PO3)0.9500.75(SiO4)0.1) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.75	17778-80-2
O4Si	0.1	17181-37-2
O3P	0.95	15389-19-2
Ni	0.9	7440-02-0
Li	1	7439-93-2
Fe	0.05	7439-89-6

RN 464172-54-1 HCAPLUS

CN Copper lithium nickel metaphosphate oxide silicate
(Cu0.05LiNi0.9(PO3)0.9500.75(SiO4)0.1) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.75	17778-80-2
O4Si	0.1	17181-37-2
O3P	0.95	15389-19-2
Cu	0.05	7440-50-8
Ni	0.9	7440-02-0
Li	1	7439-93-2

RN 464172-57-4 HCAPLUS

CN Lithium nickel zirconium metaphosphate oxide silicate
(LiNi0.9Zr0.05(PO3)0.9500.75(SiO4)0.1) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.75	17778-80-2
O4Si	0.1	17181-37-2
O3P	0.95	15389-19-2
Zr	0.05	7440-67-7
Ni	0.9	7440-02-0
Li	1	7439-93-2

IC ICM H01M010-40

ICS H01M004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Battery cathodes

(cathode active material for nonaq. electrolyte secondary battery)

IT Secondary batteries

(lithium; cathode active material for nonaq. electrolyte secondary battery)

IT 464171-95-7P, Cobalt lithium magnesium phosphate (Co0.45LiMg0.55(PO4))
 464171-96-8P, Cobalt lithium magnesium phosphate (Co0.3LiMg0.7(PO4))
 464171-97-9P, Lithium magnesium nickel phosphate (LiMg0.55Ni0.45(PO4))
 464171-98-0P, Lithium magnesium nickel phosphate (LiMg0.7Ni0.3(PO4))
 464171-99-1P, Cobalt lithium magnesium phosphate (Co0.85Li1.1Mg0.05(PO4)) 464172-00-7P, Lithium magnesium nickel phosphate (Li1.1Mg0.05Ni0.85(PO4)) 464172-01-8P, Cobalt lithium titanium phosphate (Co0.85Li1.1Ti0.05(PO4)) 464172-02-9P, Lithium nickel titanium phosphate (Li1.1Ni0.85Ti0.05(PO4)) 464172-03-0P, Cobalt lithium vanadium phosphate (Co0.85Li1.1V0.05(PO4)) 464172-04-1P, Lithium nickel vanadium phosphate

(Li_{1.1}Ni_{0.85}V_{0.05}(PO₄)) 464172-05-2P, Chromium cobalt lithium phosphate (Cr_{0.05}Co_{0.85}Li_{1.1}(PO₄)) 464172-06-3P, Chromium lithium nickel phosphate (Cr_{0.05}Li_{1.1}Ni_{0.85}(PO₄)) 464172-07-4P, Cobalt lithium manganese phosphate (Co_{0.85}Li_{1.1}Mn_{0.05}(PO₄)) 464172-08-5P, Lithium manganese nickel phosphate (Li_{1.1}Mn_{0.05}Ni_{0.85}(PO₄)) 464172-09-6P, Cobalt iron lithium phosphate (Co_{0.85}Fe_{0.05}Li_{1.1}(PO₄)) 464172-10-9P, Iron lithium nickel phosphate (Fe_{0.05}Li_{1.1}Ni_{0.85}(PO₄)) 464172-11-0P, Cobalt copper lithium phosphate (Co_{0.85}Cu_{0.05}Li_{1.1}(PO₄)) 464172-12-1P, Copper lithium nickel phosphate (Cu_{0.05}Li_{1.1}Ni_{0.85}(PO₄)) 464172-13-2P, Cobalt lithium zirconium phosphate (Co_{0.85}Li_{1.1}Zr_{0.05}(PO₄)) 464172-14-3P, Lithium nickel zirconium phosphate (Li_{1.1}Ni_{0.85}Zr_{0.05}(PO₄)) 464172-16-5P, Aluminum cobalt lithium phosphate (Al_{0.05}Co_{0.85}Li_{1.1}(PO₄)) 464172-17-6P, Aluminum lithium nickel phosphate (Al_{0.05}Li_{1.1}Ni_{0.85}(PO₄)) 464172-18-7P 464172-19-8P 464172-20-1P 464172-21-2P 464172-22-3P 464172-23-4P 464172-24-5P 464172-25-6P 464172-26-7P 464172-27-8P 464172-28-9P 464172-29-0P 464172-30-3P 464172-31-4P 464172-32-5P 464172-33-6P 464172-34-7P 464172-35-8P 464172-36-9P 464172-37-0P 464172-38-1P 464172-39-2P 464172-40-5P 464172-41-6P 464172-42-7P 464172-43-8P 464172-44-9P 464172-45-0P 464172-46-1P 464172-47-2P 464172-48-3P 464172-49-4P 464172-50-7P 464172-51-8P 464172-52-9P 464172-53-0P 464172-54-1P 464172-55-2P 464172-56-3P 464172-57-4P 464172-58-5P 464172-59-6P, Cobalt lithium magnesium phosphate (Co_{0.94}Li_{1.01}Mg_{0.05}(PO₄)) 464172-60-9P, Cobalt lithium magnesium phosphate (Co_{0.93}Li_{1.02}Mg_{0.05}(PO₄)) 464172-61-0P, Cobalt lithium magnesium phosphate (Co_{0.75}Li_{1.2}Mg_{0.05}(PO₄)) 464172-62-1P, Cobalt lithium magnesium phosphate (Co_{0.7}Li_{1.25}Mg_{0.05}(PO₄)) 464172-63-2P 464172-64-3P 464172-65-4P 464172-66-5P 464172-67-6P 464172-68-7P 464172-69-8P 464173-33-9P (cathode active material for non-aqueous electrolyte secondary battery)

L20 ANSWER 12 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:518137 HCAPLUS Full-text

DOCUMENT NUMBER: 137:96241

TITLE: Powdery cathode active mass including olivine structure and secondary nonaqueous electrolyte lithium battery using it

INVENTOR(S): Nakamura, Masaya; Saito, Hirohiko

PATENT ASSIGNEE(S): Denso Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002198050	A	20020712	JP 2000-397537	20001227
			<--	
PRIORITY APPLN. INFO.:			JP 2000-397537	20001227
			<--	

ED Entered STN: 12 Jul 2002

AB The cathode active mass contains phosphoric acid compds. with olivine structure represented by $\text{Li}_{1-x}\text{AxFe}_{1-y-z}\text{MyMezP}_{1-m}\text{XmO}_{4-n}\text{Zn}$ ($\text{A} = \text{Na}$ and/or K ; M is ≥ 1 of metals excluding Fe , Li , and Al ; $\text{Me} = \text{Li}$ and/or Al ; $\text{X} = \text{Si}$, N , As , and/or S ; $\text{Z} = \text{F}$, Cl , Br , I , S , and/or N ; $x = 0-0.1$; $y = 0-0.5$; $z = 0-0.3$; $y + z = 0-0.5$; $m = 0-0.3$; $n = 0-0.5$; $x + z + m + n > 0$) in the whole or part of the surfaces of the active mass particles. The battery using the active mass has high charge/discharge efficiency in large current.

IT 441759-69-3 441769-70-6 441769-71-7

441769-72-8 441769-73-9 441769-74-9

(powdery cathode active mass including phosphoric acid compound with olivine structure for nonaq. electrolyte Li battery)

RN 441769-69-3 HCAPLUS

CN Cobalt iron lithium fluoride metaphosphate oxide
($\text{Co}_0.2\text{Fe}_0.8\text{LiF}_{0.1}(\text{PO}_3)\text{O}_{0.9}$) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
F	0.1	14762-94-8
Co	0.2	7440-48-4
Li	1	7439-93-2
Fe	0.8	7439-89-6

RN 441769-70-6 HCAPLUS

CN Cobalt iron lithium chloride metaphosphate oxide
($\text{Co}_0.2\text{Fe}_0.8\text{LiCl}_{0.1}(\text{PO}_3)\text{O}_{0.9}$) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Cl	0.1	22537-15-1
O	0.9	17778-80-2
O3P	1	15389-19-2
Co	0.2	7440-48-4
Li	1	7439-93-2
Fe	0.8	7439-89-6

RN 441769-71-7 HCAPLUS

CN Cobalt iron lithium bromide metaphosphate oxide
($\text{Co}_0.2\text{Fe}_0.8\text{LiBr}_{0.1}(\text{PO}_3)\text{O}_{0.9}$) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.9	17778-80-2
O3P	1	15389-19-2
Br	0.1	10097-32-2
Co	0.2	7440-48-4
Li	1	7439-93-2
Fe	0.8	7439-89-6

RN 441769-72-8 HCAPLUS

CN Cobalt iron lithium iodide metaphosphate oxide
($\text{Co}_0.2\text{Fe}_0.8\text{LiI}_{0.1}(\text{PO}_3)\text{O}_{0.9}$) (CA INDEX NAME)

Component	Ratio	Component Registry Number

O		0.9		17778-80-2
O3P		1		15389-19-2
I		0.1		14362-44-8
Co		0.2		7440-48-4
Li		1		7439-93-2
Fe		0.8		7439-89-6

RN 441769-73-9 HCAPLUS

CN Cobalt iron lithium metaphosphate oxide sulfate
(Co_{0.2}Fe_{0.8}Li(PO₃)O_{0.5}(SO₄)_{0.1}) (CA INDEX NAME)

Component		Ratio		Component Registry Number
=====		=====		=====
O		0.5		17778-80-2
O3P		1		15389-19-2
O4S		0.1		14808-79-8
Co		0.2		7440-48-4
Li		1		7439-93-2
Fe		0.8		7439-89-6

RN 441769-74-0 HCAPLUS

CN Cobalt iron lithium metaphosphate nitrate oxide
(Co_{0.2}Fe_{0.8}Li(PO₃)(NO₃)_{0.100.6}) (CA INDEX NAME)

Component		Ratio		Component Registry Number
=====		=====		=====
O		0.6		17778-80-2
O3P		1		15389-19-2
NO3		0.1		14797-55-8
Co		0.2		7440-48-4
Li		1		7439-93-2
Fe		0.8		7439-89-6

IC ICM H01M004-58

ICS H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Battery cathodes

(powdery cathode active mass including phosphoric acid compound with
olivine structure for nonaq. electrolyte Li battery)IT 441769-67-1, Cobalt iron lithium phosphate (Co_{0.2}Fe_{0.7}Li_{1.1}(PO₄))

441769-68-2, Aluminum cobalt iron lithium phosphate

(Al_{0.1}Co_{0.2}Fe_{0.7}Li(PO₄)) 441769-69-3 441769-70-6

441769-71-7 441769-72-8 441769-73-9

441769-74-0 441769-75-1, Cobalt iron lithium phosphate

silicate (Co_{0.2}Fe_{0.8}Li(PO₄)_{0.9}(SiO₄)_{0.1}) 441769-76-2 441769-77-3,Cobalt iron lithium arsenate phosphate (Co_{0.2}Fe_{0.8}Li(AsO₄)_{0.1}(PO₄)_{0.9})

441769-78-4, Cobalt iron lithium phosphate sulfate

(Co_{0.2}Fe_{0.8}Li(PO₄)_{0.9}(SO₄)_{0.1}) 441769-79-5, Cobalt iron lithiumsodium phosphate (Co_{0.2}Fe_{0.8}Li_{0.95}Na_{0.05}(PO₄)) 441769-80-8, Cobaltiron lithium potassium phosphate (Co_{0.2}Fe_{0.8}Li_{0.95}K_{0.05}(PO₄))(powdery cathode active mass including phosphoric acid compound with
olivine structure for nonaq. electrolyte Li battery)

L20 ANSWER 13 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:256645 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 136:297382

TITLE: Carbon-coated or carbon-crosslinked redox
materials with transition metal-lithium oxide core

INVENTOR(S): for use as battery electrodes
Armand, Michel; Gauthier, Michel; Magnan,
Jean-Francois; Ravet, Nathalie
PATENT ASSIGNEE(S): Hydro-Quebec, Can.
SOURCE: PCT Int. Appl., 78 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002027824	A1	20020404	WO 2001-CA1350	20010921
<--				
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GT, GW, ML, MR, NE, SN, TD, TG				
CA 2320661	A1	20020326	CA 2000-2320661	20000926
<--				
CA 2423129	A1	20020404	CA 2001-2423129	20010921
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AU 2001093569	A	20020408	AU 2001-93569	20010921
<--				
EP 1325526	A1	20030709	EP 2001-973907	20010921
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004509058	T	20040325	JP 2002-531518	20010921
<--				
US 20040086445	A1	20040506	US 2003-362764	20030619
<--				
US 7285260	B2	20071023		
US 20070134554	A1	20070614	US 2007-655084	20070119
<--				
PRIORITY APPLN. INFO.:			CA 2000-2320661	A 20000926
<--				
			WO 2001-CA1350	W 20010921
<--				
			US 2003-362764	A1 20030619
<--				

ED Entered STN: 05 Apr 2002

AB Carbon-coated redox materials suitable for use in battery electrodes consist of a core surrounded by a coating, or interconnected by carbon crosslinks, in which the core includes a composition of formula $\text{Li}_x\text{M}_1-\text{yM}'\text{y}(\text{XO}_4)_n$, in which $y = 0-0.6$, $x = 0-2$, $n = 0-1.5$; M is a transition metal; and M' is a element of fixed valence selected from Mg^{2+} , Ca^{2+} , Al^{3+} , and Zn^{2+} , and X is S, P, and Si. Synthesis of the materials is carried out by reacting a balanced mixture of appropriate precursors in a reducing atmospheric, to adjust the valence of the transition metals, in the presence of a carbon source, which is then pyrolyzed. The resulting products exhibit an excellent elec. conductivity and a highly enhanced chemical activity.

IT 407640-57-7

(metal source; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

RN 407640-57-7 HCAPLUS

CN Iron lithium manganese phosphorus sulfur oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
S	x	7704-34-9
Mn	x	7439-96-5
Li	x	7439-93-2
Fe	x	7439-89-6

IC ICM H01M004-48

ICS C01B025-37; C01B033-20; H01M004-58; H01M004-62; C01B017-96

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 90076-65-6

(electrolyte containing; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

IT 546-89-4, Lithium acetate 553-91-3, Lithium oxalate 554-13-2, Lithium carbonate 1309-37-1, Ferric oxide, reactions 1310-65-2, Lithium hydroxide 1313-13-9, Manganese dioxide, reactions 1314-62-1, Vanadium pentoxide, reactions 1317-61-9, Magnetite, reactions 10045-86-0, Ferric phosphate 10102-24-6, Lithium silicate (Li₂SiO₃) 10377-48-7, Lithium sulfate 10377-52-3, Lithium phosphate (Li₃PO₄) 10421-48-4, Ferric nitrate 12057-24-8, Lithium oxide, reactions 12627-14-4 13453-80-0, Lithium dihydrogen phosphate 63985-45-5, Lithium orthosilicate 407640-52-2, Iron lithium manganese phosphate (Fe_{0.1}-1LiMn_{0.9}(PO₄)) 407640-53-3, Iron lithium magnesium phosphate (Fe_{0.7}-1LiMg_{0.3}(PO₄)) 407640-54-4, Calcium iron lithium phosphate (Ca₀-0.3Fe_{0.7}-1Li(PO₄)) 407640-55-5 407640-56-6, Iron lithium phosphate silicate (FeLi₁-1.9(PO₄)0.1-1(SiO₄)0-0.9) 407640-57-7 407640-58-8, Iron lithium manganese phosphate sulfate (Fe₀-1Li₁-1.2Mn₀-0.2(PO₄), (SO₄)) 407640-59-9, Iron lithium manganese phosphate ((Fe,Mn)Li₁-1.6(PO₄)) 407640-60-2, Iron lithium manganese phosphate sulfate (Fe₁-2Li₁-2Mn₀-1(PO₄), (SO₄)) 407640-61-3, Iron lithium titanium phosphate ((Fe,Ti)Li_{0.5}-2(PO₄)1.5) (metal source; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 14 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:104869 HCAPLUS Full-text

DOCUMENT NUMBER: 136:153886

TITLE: Lithium manganate-type cathode active mass and secondary lithium battery using it
INVENTOR(S): Shiosaki, Ryuji; Fujii, Akihiro; Okabe, Kazuya; Yufu, Hiroshi

PATENT ASSIGNEE(S): Yuasa Corporation, Japan

SOURCE: Jpn. Kokai Tokyo Koho, 10 pp.

CODEN: JKXKAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002042812	A	20020208	JP 2000-227758	20000727

PRIORITY APPLN. INFO.: JP 2000-227758 20000727
 <-->

ED Entered STN: 08 Feb 2002

AB The cathode active mass contains Li Mn mixed oxide $\text{Li}_{1+x}[\text{Mn}(2-x-y)\text{My}]_04$ containing B by satisfying $\text{Mn}(2-x-y)\text{My}:\text{B} = 2:0.01-0.1$ (where $x = 0-0.3$; $y = 0-0.2$; $\text{M} = \text{Be}, \text{C}, \text{Si}, \text{P}, \text{Sc}, \text{Cu}, \text{Zn}, \text{Ga}, \text{Ge}, \text{As}, \text{Se}, \text{Sr}, \text{Mo}, \text{Pd}, \text{Ag}, \text{Cd}, \text{In}, \text{Sn}, \text{Sb}, \text{Te}, \text{Ba}, \text{Ta}, \text{W}, \text{Pb}, \text{Bi}, \text{Co}, \text{Fe}, \text{Cr}, \text{Ni}, \text{Ti}, \text{Zr}, \text{Nb}, \text{Y}, \text{Al}, \text{Na}, \text{K}, \text{Mg}, \text{Ca}, \text{Cs}, \text{La}, \text{Ce}, \text{Nd}, \text{Sm}, \text{Eu}, \text{and/or Tb}$). The secondary lithium battery is equipped with a cathode containing the active mass, a Li-intercalating anode, and an electrolyte solution containing a F-containing salt. The battery has good storage stability.

IT 138758-08-4, Lithium Manganese phosphorus oxide
 (lithium manganate-type cathode active mass containing boron for secondary battery)

RN 138758-08-4 HCAPLUS

CN Lithium manganese phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Mn	x	7439-96-5
Li	x	7439-93-2

IC ICM H01M004-58

ICS C01G045-00; H01M004-02; H01M004-62; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 21324-40-3, Lithium hexafluorophosphate

(electrolyte; lithium manganate-type cathode active mass containing boron for secondary battery)

IT 53027-29-5, Iron Lithium Manganese oxide 138758-08-4, Lithium Manganese phosphorus oxide 153325-75-2, Lead Lithium Manganese oxide 153327-00-5, Gallium Lithium Manganese oxide 153327-01-6, Germanium Lithium Manganese oxide 153327-04-9, Indium Lithium Manganese oxide 153327-05-0, Lithium Manganese Tin oxide 153327-06-1, Antimony Lithium Manganese oxide 153385-76-3, Arsenic Lithium Manganese oxide 153385-77-4, Lithium Manganese tellurium oxide 162684-16-4, Lithium Manganese Nickel oxide 173390-83-5, Lithium manganese oxide ($\text{Li}_{1.08}\text{Mn}_{1.92}\text{O}_4$) 173525-03-6, Lithium Manganese Sodium oxide 175786-46-6, Lithium Magnesium Manganese oxide 187156-09-8, Lithium Manganese Zinc oxide 191538-04-2, Copper Lithium Manganese oxide 201534-12-5, Lithium Manganese Zirconium oxide 204450-96-4, Chromium Lithium Manganese oxide 208394-04-1, Lithium Manganese Titanium oxide 208394-05-2, Lithium Manganese Molybdenum oxide 208394-06-3, Carbon Lithium Manganese oxide 245085-55-6, Calcium Lithium Manganese oxide 245085-56-7, Lithium Manganese Terbium oxide 252568-43-7, Lithium Manganese Tungsten oxide 252568-44-8, Lithium Manganese silicon oxide 273725-34-1, Lithium Manganese Potassium oxide 305365-08-6, Aluminum lithium manganese oxide ($\text{Al}_{1.05}\text{Li}_{1.08}\text{Mn}_{1.87}\text{O}_4$) 320425-32-9, Cerium Lithium Manganese oxide 320425-33-0, Bismuth Lithium Manganese oxide

(357308-23-7, Barium Lithium Manganese oxide 374079-61-5, Lithium Manganese Scandium oxide 374079-62-6, Lithium Manganese Strontium oxide 374079-63-7, Lanthanum Lithium Manganese oxide 374079-64-8, Lithium Manganese Yttrium oxide 393802-01-2, Beryllium lithium manganese oxide 393802-02-3, Lithium manganese selenium oxide 393802-03-4, Lithium manganese palladium oxide 393802-04-5, Lithium manganese silver oxide 393802-05-6, Cadmium lithium manganese oxide 393802-06-7, Lithium manganese tantalum oxide 393802-07-8, Lithium manganese niobium oxide 393802-08-9, Cesium lithium manganese oxide 393802-09-0, Lithium manganese neodymium oxide 393802-10-3, Lithium manganese samarium oxide 393802-11-4, Europium lithium manganese oxide
(lithium manganese-type cathode active mass containing boron for secondary battery)

L20 ANSWER 15 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:745704 HCAPLUS Full-text
DOCUMENT NUMBER: 135:275419
TITLE: Lithium batteries
INVENTOR(S): Uemura, Toshihiko; Osaki, Makoto
PATENT ASSIGNEE(S): Kyocera Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001283913	A	20011012	JP 2000-90975	20000329
			<--	
PRIORITY APPLN. INFO.:			JP 2000-90975	20000329
			<--	

ED Entered STN: 12 Oct 2001
AB The batteries have a solid electrolyte between an electrode pair, where the electrode and/or separator contains a compound having a siloxane backbone and an aprotic solvent.
IT 273943-45-6, Aluminum lithium phosphorus silicon titanium oxide
(solid electrolytes containing siloxanes and aprotic solvents for secondary lithium batteries)
RN 273943-45-6 HCAPLUS
CN Aluminum lithium phosphorus silicon titanium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Ti	x	7440-32-6
Si	x	7440-21-3
Li	x	7439-93-2
Al	x	7429-90-5

IC ICM H01M010-40
ICS C08K003-22; C08K005-151; C08L083-04; H01M004-02; H01M004-58; H01M006-18
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium battery electrolyte electrode siloxane compd aprotic

solvent
 IT Secondary batteries
 (lithium; electrodes and solid electrolytes containing
 siloxanes and aprotic solvents for secondary lithium batteries)
 IT Polysiloxanes, uses
 (solid electrolytes containing siloxanes and aprotic solvents
 for secondary lithium batteries)
 IT 12031-92-4, Lithium manganese oxide (LiMn5O12)
 (anodes containing solid electrolyte and siloxanes and
 aprotic solvents for secondary lithium batteries)
 IT 12057-17-9, Lithium manganese oxide (LiMn2O4)
 (cathodes containing solid electrolyte and siloxanes and
 aprotic solvents for secondary lithium batteries)
 IT 108-32-7, Propylene carbonate 273943-45-6, Aluminum lithium
 phosphorus silicon titanium oxide
 (solid electrolytes containing siloxanes and aprotic solvents
 for secondary lithium batteries)

L20 ANSWER 16 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:485514 HCAPLUS Full-text
 DOCUMENT NUMBER: 135:63870
 TITLE: Lithium batteries
 INVENTOR(S): Kamimura, Toshihiko; Osaki, Makoto; Mishima,
 Hiromitsu; Magome, Shinji; Hara, Toru; Kitahara,
 Nobuyuki; Higuchi, Ei
 PATENT ASSIGNEE(S): Kyocera Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001185165	A	20010706	JP 1999-365528	19991222
			<--	
PRIORITY APPLN. INFO.:			JP 1999-365528	19991222
			<--	

ED Entered STN: 06 Jul 2001

AB The batteries have an electrode pair, a solid electrolyte between the
 electrodes, and an acrylic polymer attached siloxane between the electrode
 active mass particles and the electrolyte particles. The siloxane may also
 contain RuO2, Sb2O3 doped SnO2, or SnO2 doped In2O3.

IT 273943-45-6, Aluminum lithium phosphorus silicon titanium
 oxide
 (secondary lithium batteries containing acrylic siloxane layer between
 electrodes and solid electrolytes)

RN 273943-45-6 HCAPLUS

CN Aluminum lithium phosphorus silicon titanium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Ti	x	7440-32-6
Si	x	7440-21-3
Li	x	7439-93-2
Al	x	7429-90-5

IC ICM H01M006-18
ICS H01M010-36; H01M010-38; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT Polysiloxanes, uses
(acrylic; secondary lithium batteries containing acrylic siloxane layer between electrodes and solid electrolytes)
IT Secondary batteries
(lithium; secondary lithium batteries containing acrylic siloxane layer between electrodes and solid electrolytes)
IT Acrylic polymers, uses
(polysiloxane-; secondary lithium batteries containing acrylic siloxane layer between electrodes and solid electrolytes)
IT Carbonaceous materials (technological products)
(secondary lithium batteries with carbon containing acrylic siloxane layer between electrodes and solid electrolytes)
IT 12031-92-4, Lithium manganese oxide (Li4Mn5O12) 155472-68-7, Lithium manganese oxide (Li1.1Mn1.9O4) 273943-45-6, Aluminum lithium phosphorus silicon titanium oxide
(secondary lithium batteries containing acrylic siloxane layer between electrodes and solid electrolytes)
IT 12036-10-1, Ruthenium dioxide
(secondary lithium batteries containing ruthenium oxide doped acrylic siloxane layer between electrodes and solid electrolytes)

L20 ANSWER 17 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:414797 HCAPLUS Full-text

DOCUMENT NUMBER: 135:21943

TITLE: Lithium battery containing glass-ceramic solid electrolyte

INVENTOR(S): Uemura, Toshihiko; Osaki, Makoto; Mishima, Hiromitsu; Magome, Shinji; Hara, Toru; Kitahara, Nobuyuki; Higuchi, Hisashi

PATENT ASSIGNEE(S): Kyocera Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001155777	A	20010608	JP 1999-336716	19991126
			<--	
PRIORITY APPLN. INFO.:			JP 1999-336716	19991126
			<--	

ED Entered STN: 08 Jun 2001

AB The battery is equipped with a solid electrolyte layer sandwiched between a pair of electrodes, where the electrodes and the solid electrolyte contain a nonprotonic solvent. Preferably, the solid electrolyte layer contains Li ion-conducting oxide-type glass ceramics. The battery has good electrochem. property and resistance to overvoltage.

IT 273943-45-6, Aluminum lithium phosphorus silicon titanium oxide
(electrolyte; lithium battery containing glass-ceramic solid electrolyte and nonprotonic solvent)

RN 273943-45-6 HCAPLUS

CN Aluminum lithium phosphorus silicon titanium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Ti	x	7440-32-6
Si	x	7440-21-3
Li	x	7439-93-2
Al	x	7429-90-5

IC ICM H01M010-40
ICS H01M010-40; H01M004-02; H01M004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium battery glass ceramic solid electrolyte nonprotonic solvent

IT Battery electrolytes
(lithium battery containing glass-ceramic solid electrolyte and nonprotonic solvent)

IT Secondary batteries
(lithium; lithium battery containing glass-ceramic solid electrolyte and nonprotonic solvent)

IT 12031-92-4, Lithium manganese oxide (LiMn5O12)
(anode; lithium battery containing glass-ceramic solid electrolyte and nonprotonic solvent)

IT 12057-17-9, Lithium manganese oxide (LiMn2O4)
(cathode; lithium battery containing glass-ceramic solid electrolyte and nonprotonic solvent)

IT 273943-45-6, Aluminum lithium phosphorus silicon titanium oxide
(electrolyte; lithium battery containing glass-ceramic solid electrolyte and nonprotonic solvent)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 110-71-4, 1,2-Dimethoxyethane 616-38-6, Dimethyl carbonate
(solvent; lithium battery containing glass-ceramic solid electrolyte and nonprotonic solvent)

L20 ANSWER 18 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:414793 HCAPLUS Full-text

DOCUMENT NUMBER: 135:35187

TITLE: Batteries comprising solid electrolytes sandwiched in between spinel-type lithium manganate cathodes and spinel-type lithium titanate anodes

INVENTOR(S): Hara, Toru; Kitahara, Nobuyuki; Uemura, Toshihiko; Mishima, Hiromitsu; Magome, Shinji; Osaki, Makoto; Higuchi, Hisashi

PATENT ASSIGNEE(S): Kyocera Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001155763	A	20010608	JP 1999-336715	19991126
			<--	
PRIORITY APPLN. INFO.:			JP 1999-336715	19991126

<--

ED Entered STN: 08 Jun 2001

AB The batteries comprise solid electrolytes of (A) sintered materials of Li_2MnO_3 and $\text{Li}_{1-x}\text{yMxTi}_2\text{-xSi}_2\text{P}_3\text{-yO}_{12}$ (I; $\text{M} = \text{Al}$ or Ga ; $x = 0-0.4$; $0 < y \leq 0.6$) on the cathode side and (B) sintered materials of Li_2TiO_3 and I on the anode side, sandwiched in between the electrodes and placed in an outer package. Such batteries with cathodes consisting of $\text{Li}_{1-x}\text{Mn}_2\text{-xO}_4$ ($x = 0.05-0.2$) or $\text{Li}_{1-x}\text{Ni}_2\text{Mn}_2\text{-xO}_4$ ($x = 0-0.2$; $0.4 \leq y < 0.6$) and anodes consisting of $\text{Li}_{1-x}\text{Ti}_2\text{-xO}_4$ ($x = 0.25-0.40$) are also claimed. Batteries with low surface resistance between the electrodes and the electrolytes are obtained. The batteries are suitable for use in personal digital assistance.

IT 343950-44-7
(cathode-side electrolyte; batteries comprising lithium titanium phosphate silicate electrolytes showing low surface resistances with lithium spinel oxide electrodes for use in personal digital assistances)

RN 343950-44-7 HCAPLUS

CN Aluminum lithium manganese phosphorus silicon titanium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Ti	x	7440-32-6
Si	x	7440-21-3
Mn	x	7439-96-5
Li	x	7439-93-2
Al	x	7429-90-5

IC ICM H01M010-36
ICS H01M004-02; H01M004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 57

ST lithium titanium phosphate silicate battery electrolyte;
spinel lithium oxide electrode battery electrolyte; personal
digital assistance solid electrolyte battery

IT Battery anodes
Battery cathodes
Battery electrolytes
Solid state secondary batteries
(batteries comprising lithium titanium phosphate silicate electrolytes showing low surface resistances with lithium spinel oxide electrodes for use in personal digital assistances)

IT 123921-35-7, Lithium titanium oxide ($\text{Li}_{1.33}\text{Ti}_{1.67}\text{O}_4$) 343950-34-5,
Lithium titanium oxide ($\text{Li}_{1.25}\text{-1.4Ti}_{1.6}\text{-1.75O}_4$)
(anode; batteries comprising lithium titanium phosphate silicate electrolytes showing low surface resistances with lithium spinel oxide electrodes for use in personal digital assistances)

IT 343950-44-7
(cathode-side electrolyte; batteries comprising lithium titanium phosphate silicate electrolytes showing low surface resistances with lithium spinel oxide electrodes for use in personal digital assistances)

IT 155472-68-7, Lithium manganese oxide ($\text{Li}_{1.1}\text{Mn}_{1.9}\text{O}_4$) 335638-14-7,
Lithium manganese oxide ($\text{Li}_{1.05}\text{-1.2Mn}_{1.8}\text{-1.95O}_4$) 343950-32-3,
Lithium manganese nickel oxide ($\text{Li}_{1-1.2}\text{Mn}_{0.4-0.6}\text{Ni}_{0.2-0.6}\text{O}_4$)
(cathode; batteries comprising lithium titanium phosphate silicate electrolytes showing low surface resistances with lithium

spinel oxide electrodes for use in personal digital assistances)

IT 12031-82-2, Lithium titanium oxide (Li₂TiO₃)
(electrolyte on anode side containing; batteries comprising lithium titanium phosphate silicate electrolytes showing low surface resistances with lithium spinel oxide electrodes for use in personal digital assistances)

IT 12163-00-7, Lithium manganese oxide (Li₂MnO₃)
(electrolyte on cathode side containing; batteries comprising lithium titanium phosphate silicate electrolytes showing low surface resistances with lithium spinel oxide electrodes for use in personal digital assistances)

IT 343950-37-8 343950-39-0 343950-42-5
(electrolyte; batteries comprising lithium titanium phosphate silicate electrolytes showing low surface resistances with lithium spinel oxide electrodes for use in personal digital assistances)

L20 ANSWER 19 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:336754 HCAPLUS Full-text

DOCUMENT NUMBER: 134:342526

TITLE: Secondary lithium battery having modified interfacial layer between electrode and electrolyte layers

INVENTOR(S): Osaki, Makoto; Kamimura, Toshihiko; Higuchi, Ei; Kitahara, Nobuyuki; Hara, Toru; Mishima, Hiromitsu; Magome, Shinji

PATENT ASSIGNEE(S): Kyocera Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001126758	A	20010511	JP 1999-307149	19991028
			<--	
PRIORITY APPLN. INFO.:			JP 1999-307149	19991028
			<--	

ED Entered STN: 11 May 2001

AB The battery using low-m.p. glasses as binders has a mixed layer containing active material powders, solid electrolyte powders, and low-m.p. glass binders between electrode and solid electrolyte layers. The battery showed high discharge capacity.

IT 273943-45-6, Aluminum lithium phosphorus silicon titanium oxide

(solid electrolyte; secondary lithium battery having modified interfacial layer between electrode and electrolyte layers)

RN 273943-45-6 HCAPLUS

CN Aluminum lithium phosphorus silicon titanium oxide (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
O	x	17778-80-2
P	x	7723-14-0
Ti	x	7440-32-6
Si	x	7440-21-3

Li		x		7439-93-2
Al		x		7429-90-5

IC ICM H01M010-38
ICS H01M004-02; H01M004-58; H01M010-36

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium battery interfacial layer electrode electrolyte;
glass binder lithium battery discharge capacity

IT Aluminoborosilicate glasses
(lithium zinc, binder; secondary lithium battery having modified
interfacial layer between electrode and electrolyte
layers)

IT Secondary batteries
(lithium; secondary lithium battery having modified interfacial
layer between electrode and electrolyte layers)

IT 12031-92-4P, Lithium manganese oxide (Li4Mn5O12)
(anode active material; secondary lithium battery having modified
interfacial layer between electrode and electrolyte
layers)

IT 155472-68-7P, Lithium manganese oxide (Li1.1Mn1.9O4)
(cathode active material; secondary lithium battery having modified
interfacial layer between electrode and electrolyte
layers)

IT 273943-45-6, Aluminum lithium phosphorus silicon titanium
oxide
(solid electrolyte; secondary lithium battery having
modified interfacial layer between electrode and
electrolyte layers)

L20 ANSWER 20 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:336740 HCAPLUS Full-text

DOCUMENT NUMBER: 134:342514

TITLE: Lithium batteries with electrodes showing strong
adhesion with solid electrolytesINVENTOR(S): Kamimura, Toshiniko; Osaki, Makoto; Mishima,
Hiromitsu; Magome, Shinji; Hara, Toru; Kitahara,
Nobuyuki; Higuchi, Ei

PATENT ASSIGNEE(S): Kyocera Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001126740	A	20010511	JP 1999-303054	19991025
			<--	
PRIORITY APPLN. INFO.:			JP 1999-303054	19991025
			<--	

ED Entered STN: 11 May 2001

AB The batteries comprise (a) electrodes containing compds. having siloxane
backbones filled in spaces in between the active material powder and (b) solid
electrolytes consisting of sintered Li ion-conducting crystallized glass. The
siloxane compound may contain RuO2, Sb2O3-doped SnO2, or SnO2-doped In2O3.
Batteries with excellent charge-discharge characteristics are obtained.

IT 273943-45-6
(electrolyte; lithium batteries comprising of Li
ion-conductive crystallized glass electrolytes and electrodes

comprising of siloxane-containing binders)

RN 273943-45-6 HCAPLUS

CN Aluminum lithium phosphorus silicon titanium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Ti	x	7440-32-6
Si	x	7440-21-3
Li	x	7439-93-2
Al	x	7429-90-5

IC ICM H01M006-18

ICS H01M004-62; H01M010-36

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 57ST lithium battery electrode siloxane binder; sintered glass solid
electrolyte battery

IT Battery electrodes

Battery electrolytes

(lithium batteries comprising of Li ion-conductive crystallized glass
electrolytes and electrodes comprising of siloxane-containing
binders)

IT Glass ceramics

(lithium ion-conducting; lithium batteries comprising of Li
ion-conductive crystallized glass electrolytes and electrodes
comprising of siloxane-containing binders)

IT Ionic conductors

Secondary batteries

(lithium; lithium batteries comprising of Li ion-conductive crystallized
glass electrolytes and electrodes comprising of
siloxane-containing binders)

IT 7631-86-9P, Silica, uses

(electrode binder; lithium batteries comprising of Li
ion-conductive crystallized glass electrolytes and electrodes
comprising of siloxane-containing binders)

IT 273943-45-6

(electrolyte; lithium batteries comprising of Li
ion-conductive crystallized glass electrolytes and electrodes
comprising of siloxane-containing binders)IT 1309-64-4, Antimony oxide (Sb2O3), uses 1312-43-2, Indium oxide
(In2O3) 12036-10-1, Ruthenium oxide (RuO2) 12673-86-8, Antimony
tin oxide 18282-10-5, Tin dioxide 50926-11-9, ITO(lithium batteries comprising of Li ion-conductive crystallized glass
electrolytes and electrodes comprising of siloxane-containing
binders)

IT 681-84-5, Tetramethoxysilane

(lithium batteries comprising of Li ion-conductive crystallized glass
electrolytes and electrodes comprising of siloxane-containing
binders)

L20 ANSWER 21 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:242930 HCAPLUS Full-text

DOCUMENT NUMBER: 134:268766

TITLE: Lithium battery with improved interfacial
structure between electrode and
electrolyte

INVENTOR(S): Kamimura, Toshihiko; Osaki, Makoto; Mishima,

Hiromitsu; Magome, Shinji; Hara, Akira; Kitahara,
 Nobuyuki; Higuchi, Hisashi
 PATENT ASSIGNEE(S): Kyocera Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001093536	A	20010406	JP 1999-275355	19990928
			<--	
PRIORITY APPLN. INFO.:			JP 1999-275355	19990928
			<--	

ED Entered STN: 06 Apr 2001

AB In the battery comprising a solid electrolyte sandwiched between a pair of
 cathode and anode, the solid electrolyte is obtained by firing mixts. of Li-
 Ti-, and P-containing crystalline solid electrolyte powders, Ti oxide, and Li
 comds. The battery shows reduced grain boundary resistivity in the
 electrolyte, reduced interfacial resistivity between electrodes and the
 electrolyte, and good charge-discharge performance.

IT 332010-94-3P, Lithium phosphorus titanium oxide
 (solid electrolyte; lithium battery with improved
 interfacial structure between electrode and electrolyte)

RN 332010-94-3 HCAPLUS

CN Lithium phosphorus titanium oxide (CA INDEX NAME)

Component	Ratio	Component	Registry Number
O	x		17778-80-2
P	x		7723-14-0
Ti	x		7440-32-6
Li	x		7439-93-2

IC ICM H01M006-18

ICS H01M004-58; H01M010-36

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium solid electrolyte battery interfacial structure;
 titania lithium hydroxide solid electrolyte firing

IT Solid state secondary batteries

(lithium battery with improved interfacial structure between
 electrode and electrolyte)

IT Secondary batteries

(lithium; lithium battery with improved interfacial structure
 between electrode and electrolyte)

IT 12031-95-7, Lithium titanium oxide (Li4Ti5O12)

(anode; lithium battery with improved interfacial structure between
 electrode and electrolyte)

IT 12031-92-4P, Lithium manganese oxide (Li4Mn5O12)

(anode; lithium battery with improved interfacial structure between
 electrode and electrolyte)

IT 155472-68-7P, Lithium manganese oxide (Li1.1Mn1.9O4)

(cathode; lithium battery with improved interfacial structure
 between electrode and electrolyte)

IT 1310-65-2, Lithium hydroxide 13463-67-7, Titania, uses

(lithium battery with improved interfacial structure between
 electrode and electrolyte)

IT 30622-39-0, Lithium titanium phosphate [LiTi₂(PO₄)₃]
 (lithium battery with improved interfacial structure between
 electrode and electrolyte)

IT 332010-94-3F, Lithium phosphorus titanium oxide
 (solid electrolyte; lithium battery with improved
 interfacial structure between electrode and electrolyte)

L20 ANSWER 22 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:242929 HCAPLUS Full-text

DOCUMENT NUMBER: 134:268765

TITLE: Solid electrolyte battery with improved
 interfacial structure between electrolyte
 and electrode

INVENTOR(S): Kamimura, Toshihiko; Osaki, Makoto; Mishima,
 Hiromitsu; Magome, Shinji; Hara, Akira; Kitahara,
 Nobuyuki; Higuchi, Hisashi

PATENT ASSIGNEE(S): Kyocera Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001093535	A	20010406	JP 1999-275354	19990928
			<--	
PRIORITY APPLN. INFO.:			JP 1999-275354	19990928
			<--	

ED Entered STN: 06 Apr 2001

AB In the battery comprising a solid electrolyte sandwiched between a pair of
 cathode and anode composed transition metal element-containing active
 material, the transition metals in the cathode and anode active materials are
 dispersed in the solid electrolyte at the cathode and anode side, resp. The
 battery showed reduced internal resistivity and good charge-discharge
 performance.

IT 273943-45-6, Aluminum lithium phosphorus silicon titanium
 oxide
 (solid electrolyte; solid electrolyte battery
 with improved interfacial structure between electrolyte
 and electrode)

RN 273943-45-6 HCAPLUS

CN Aluminum lithium phosphorus silicon titanium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
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O	x	17778-80-2
P	x	7723-14-0
Ti	x	7440-32-6
Si	x	7440-21-3
Li	x	7439-93-2
Al	x	7429-90-5

IC ICM H01M006-18

ICS H01M004-58; H01M010-36

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST solid battery interfacial structure electrolyte electrode;
 transition metal dispersion electrolyte solid battery

IT Secondary batteries
(lithium; solid electrolyte battery with improved
interfacial structure between electrolyte and electrode)

IT Solid state secondary batteries
(solid electrolyte battery with improved interfacial
structure between electrolyte and electrode)

IT 12031-95-7, Lithium titanium oxide (Li4Ti5O12)
(anode; solid electrolyte battery with improved
interfacial structure between electrolyte and electrode)

IT 12031-92-4P, Lithium manganese oxide (Li4Mn5O12)
(anode; solid electrolyte battery with improved
interfacial structure between electrolyte and electrode)

IT 155472-68-7P, Lithium manganese oxide (Li1.1Mn1.9O4)
(cathode; solid electrolyte battery with improved
interfacial structure between electrolyte and electrode)

IT 7439-96-5, Manganese, processes
(dispersion into electrolyte; solid electrolyte
battery with improved interfacial structure between
electrolyte and electrode)

IT 273943-45-6, Aluminum lithium phosphorus silicon titanium
oxide
(solid electrolyte; solid electrolyte battery
with improved interfacial structure between electrolyte
and electrode)

L20 ANSWER 23 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:133981 HCAPLUS Full-text

DOCUMENT NUMBER: 134:181061

TITLE: Secondary lithium battery with cathode containing
lithium manganese mixed oxide
Yoshimura, Seiji; Ota, Taeko; Fujitani, Noboru;
Nishiguchi, Nobuhiro

PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001052698	A	20010223	JP 1999-220597	19990804
			<--	
JP 3639468	B2	20050420		
US 6461770	B1	20021008	US 2000-630675	20000801
			<--	
PRIORITY APPLN. INFO.:			JP 1999-220597	A 19990804
			<--	

ED Entered STN: 23 Feb 2001

AB The battery is equipped with a cathode active mass containing a Li Mn mixed oxide containing B and P. Preferably, the cathode uses a Li Mn mixed oxide manufactured from a mixture having atomic ratio of B:P:Li:Mn = 0.01-0.20:0.01-0.10:0.1-2.0:1 by heating under O. The cathode active mass is suppressed from reaction with an electrolyte solution and resulting battery has long cycle life.

IT 326851-29-6P, Boron lithium manganese phosphorus oxide
(lithium manganese mixed oxide containing boron and phosphorus in
cathode for battery)

RN 326851-29-0 HCAPLUS

CN Boron lithium manganese phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
B	x	7440-42-8
Mn	x	7439-96-5
Li	x	7439-93-2

IC ICM H01M004-58
ICS H01M004-02; H01M004-40; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 21324-40-3, Lithium hexafluorophosphate 33454-82-9, Lithium
trifluoromethanesulfonate 90076-65-6, Lithium
bis(trifluoromethanesulfonyl)imide 132404-42-3, Lithium
tris(trifluoromethanesulfonyl)methide 132843-44-8, Lithium
bis(pentafluoroethanesulfonyl)imide
(electrolyte; lithium manganese mixed oxide containing boron
and phosphorus in cathode for battery)
IT 326951-29-9P, Boron lithium manganese phosphorus oxide
(lithium manganese mixed oxide containing boron and phosphorus in
cathode for battery)

L20 ANSWER 24 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:774123 HCAPLUS Full-text
DOCUMENT NUMBER: 133:352634
TITLE: Electrode materials having increased surface
conductivity
INVENTOR(S): Ravet, Nathalie; Besner, Simon; Simoneau, Martin;
Vallee, Alain; Armand, Michel; Magnan,
Jean-francois
PATENT ASSIGNEE(S): Hydro-Quebec, Can.
SOURCE: Eur. Pat. Appl., 22 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
EP 1049182	A2	20001102	EP 2000-401207	20000502
			<--	
EP 1049182	A3	20040211		
EP 1049182	B1	20080102		
			R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO	
CA 2270771	A1	20001030	CA 1999-2270771	19990430
			<--	
CA 2307119	A1	20001030	CA 2000-2307119	20000428
			<--	
CA 2625896	A1	20001030	CA 2000-2625896	20000428
			<--	
JP 2001015111	A	20010119	JP 2000-132779	20000501
			<--	
EP 1796189	A2	20070613	EP 2007-4289	20000502
			<--	
EP 1796189	A3	20070620		

R: DE, FR, GB, IT
 US 20020195591 A1 20021226 US 2002-175794 20020621
 <--
 US 6855273 B2 20050215
 US 20040140458 A1 20040722 US 2003-740449 20031222
 <--
 US 6962666 B2 20051108
 US 20060060827 A1 20060323 US 2005-266339 20051104
 <--
 US 7344659 B2 20080318
 JP 2008186807 A 20080814 JP 2008-41303 20080222
 <--
 PRIORITY APPLN. INFO.: CA 1999-2270771 A 19990430
 <--
 CA 2000-2307119 A3 20000428
 <--
 US 2000-560572 B1 20000428
 <--
 JP 2000-132779 A3 20000501
 <--
 EP 2000-401207 A3 20000502
 <--
 US 2002-175794 A3 20020621
 <--
 US 2003-740449 A1 20031222
 <--
 ED Entered STN: 05 Nov 2000
 AB Intercalated electrode materials comprising complex oxides, especially Li oxides, are prepared, suitable for redox reaction by exchange of alkali metal ions (especially Li) and electrons with an electrolyte. The complex oxide electrodes can be used in batteries, supercapacitors or electrochromic light moderators. The complex oxides have the general formula $AaMmZzOoNnFf$, where A is alkali metal (e.g., Li), M is ≥ 1 transition metal (e.g., Fe, Mn, V, Ti, Mo, Nb, Zn, W), Z is ≥ 1 nonmetal (e.g., P, S, Si, Se, As, Ge, B, Sn), and a,m,z,o,n,f are chosen for elec. neutrality. A conductive carbon coating is formed or deposited on the surface of the electrode material, e.g., by pyrolysis of an organic material, hydrocarbons or polymers, for increased surface conductivity
 IT 304905-36-0P, Iron lithium phosphorus silicon oxide
 304905-37-1P 304905-38-2P, Iron lithium phosphorus
 fluoride oxide 304905-39-3P 304905-40-6P
 304905-41-7P 304905-42-8P
 (electrode materials having increased surface conductivity)
 RN 304905-36-0 HCAPLUS
 CN Iron lithium phosphorus silicon oxide (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
O	x	17778-80-2
P	x	7723-14-0
Si	x	7440-21-3
Li	x	7439-93-2
Fe	x	7439-89-6

RN 304905-37-1 HCAPLUS
 CN Lithium manganese phosphorus silicon oxide (CA INDEX NAME)

Component	Ratio	Component
		Registry Number

Component	Ratio	Component
Registry Number		
O	x	17778-80-2
P	x	7723-14-0
Si	x	7440-21-3
Mn	x	7439-96-5
Li	x	7439-93-2

RN 304905-38-2 HCAPLUS

CN Iron lithium phosphorus fluoride oxide (CA INDEX NAME)

Component	Ratio	Component
Registry Number		
O	x	17778-80-2
F	x	14762-94-8
P	x	7723-14-0
Li	x	7439-93-2
Fe	x	7439-89-6

RN 304905-39-3 HCAPLUS

CN Lithium manganese phosphorus silicon fluoride oxide (CA INDEX NAME)

Component	Ratio	Component
Registry Number		
O	x	17778-80-2
F	x	14762-94-8
P	x	7723-14-0
Si	x	7440-21-3
Mn	x	7439-96-5
Li	x	7439-93-2

RN 304905-40-6 HCAPLUS

CN Iron lithium phosphorus silicon sulfur oxide (CA INDEX NAME)

Component	Ratio	Component
Registry Number		
O	x	17778-80-2
P	x	7723-14-0
S	x	7704-34-9
Si	x	7440-21-3
Li	x	7439-93-2
Fe	x	7439-89-6

RN 304905-41-7 HCAPLUS

CN Lithium manganese phosphorus silicon sulfur oxide (CA INDEX NAME)

Component	Ratio	Component
Registry Number		
O	x	17778-80-2
P	x	7723-14-0
S	x	7704-34-9
Si	x	7440-21-3
Mn	x	7439-96-5
Li	x	7439-93-2

RN 304905-42-8 HCAPLUS

CN Iron lithium phosphorus silicon sulfur titanium vanadium oxide (CA

INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
S	x	7704-34-9
V	x	7440-62-2
Ti	x	7440-32-6
Si	x	7440-21-3
Li	x	7439-93-2
Fe	x	7439-89-6
IC	ICM H01M004-58 ICS H01M004-48; H01M004-62	
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology) Section cross-reference(s): 57, 72, 76	
IT	Polyoxyalkylenes, uses (electrolytes; electrode materials having increased surface conductivity)	
IT	Electrolytic capacitors (supercapacitors; electrode materials having increased surface conductivity)	
IT	7440-44-0P, Carbon, uses 15365-14-7P, Iron lithium phosphate (FeLiPO4) 30734-08-8P, Lithium manganese silicate Li2MnSiO4 39302-37-9P, Lithium titanium oxide 180984-63-8P, Lithium magnesium titanium oxide 252943-50-3P, Lithium vanadium phosphate silicate Li3.5V2(P04)2.5(SiO4)0.5 304905-30-4P 304905-31-5P, Iron lithium fluoride (FeLi0.2F3) 304905-32-6P, Lithium manganese nitride oxide (Li3MnNO) 304905-33-7P 304905-34-8P 304905-35-9P, Lithium magnesium titanium oxide (Li3.5Mg0.5Ti4O12) 304905-36-6P, Iron lithium phosphorus silicon oxide 304905-37-1P 304905-38-2P, Iron lithium phosphorus fluoride oxide 304905-39-3P 304905-40-6P 304905-41-7P 304905-42-8P (electrode materials having increased surface conductivity)	
IT	75-05-8, Acetonitrile, uses 96-48-0, γ -Butyrolactone 96-49-1, Ethylene carbonate 110-71-4 616-38-6, Dimethyl carbonate 646-06-0, Dioxolane 2832-49-7, Tetraethylsulfamide 21324-40-3, Lithium hexafluorophosphate LiPF6 25322-68-3 66950-70-7 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide (electrolytes; electrode materials having increased surface conductivity)	

L20 ANSWER 25 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2000:418149 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 133:32679
 TITLE: Secondary polymer electrolyte lithium
 batteries
 INVENTOR(S): Kaburagi, Kimiaki; Kimishima, Takahiro
 PATENT ASSIGNEE(S): Toshiba Battery Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2000173654      A      20000623      JP 1998-345561      19981204
                                     <--
PRIORITY APPLN. INFO.:      JP 1998-345561      19981204
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ED  Entered STN:  23 Jun 2000
AB  The batteries have an electrolyte layer containing an electrolyte solution
    retaining polymer and a Li+ conductive glass ceramic. The glass ceramic is
    preferably Li1+x(Al,Ga)xTi2-zP3O12 (x ≤0.3), Li1+x+yAlxTi2-xSiyP3-yO12 (y
    ≤0.1), or Li1+zAlzGe2-zP3O12 (z ≤0.2).
IT  273943-45-6
    (polymer electrolyte containing lithium ion conductive glass
    ceramic for secondary lithium batteries)
RN  273943-45-6  HCAPLUS
CN  Aluminum lithium phosphorus silicon titanium oxide  (CA INDEX NAME)

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Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Ti	x	7440-32-6
Si	x	7440-21-3
Li	x	7439-93-2
Al	x	7429-90-5

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IC  ICM H01M010-40
    ICS C03C010-12
CC  52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST  secondary lithium battery polymer glass ceramic electrolyte;
    lithium aluminum gallium titanium phosphate battery
    electrolyte; germanium lithium aluminum phosphate battery
    electrolyte; silicon lithium aluminum gallium titanium
    phosphate electrolyte
IT  Battery electrolytes
    (polymer electrolyte containing lithium ion conductive glass
    ceramic for secondary lithium batteries)
IT  96-49-1, Ethylene carbonate  616-38-6, Dimethyl carbonate
    9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
    21324-40-3, Lithium hexafluorophosphate  273943-44-5
    273943-45-6  273943-46-7, Aluminum germanium lithium
    phosphate (Al0-0.2Ge1.8-2Li1-1.2(PO4)3)
    (polymer electrolyte containing lithium ion conductive glass
    ceramic for secondary lithium batteries)

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L20 ANSWER 26 OF 40  HCAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:      2000:362749  HCAPLUS  Full-text
DOCUMENT NUMBER:      132:350261
TITLE:                  Battery electrodes containing porous polymer
                        electrolytes and nonaqueous-
                        electrolyte secondary batteries using them
INVENTOR(S):           Segawa, Masazumi
PATENT ASSIGNEE(S):    Japan Storage Battery Co., Ltd., Japan
SOURCE:                Jpn. Kokai Tokyo Koho, 7 pp.
                        CODEN: JKXXAF
DOCUMENT TYPE:         Patent
LANGUAGE:              Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

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PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000149926	A	20000530	JP 1998-327488	19981102
PRIORITY APPLN. INFO.:			JP 1998-327488	19981102

ED Entered STN: 31 May 2000

AB The title electrode contains spinel $\text{LiNi}_{1-x}\text{M}_x\text{O}_2$ (M = metal, F, P, B; x = 0-0.5), which are manufactured by immersing polymer solution-containing electrodes in (water-containing) aq. The nonaq.-electrolyte secondary battery uses the electrodes as the cathodes.

IT 195881-00-6, Lithium nickel phosphorus oxide
(porous polymer electrolyte-containing Li Ni oxide for
secondary Li battery cathode)

RN 195881-00-6 HCAPLUS

CN Lithium nickel phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	1778-80-2
P	x	7723-14-0
Ni	x	7440-02-0
Li	x	7439-93-2

IC ICM H01M004-02

ICS H01M004-04; H01M004-58; H01M004-62; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium nickel oxide battery cathode; polymer electrolyte
porous lithium battery

IT Secondary batteries
(lithium; porous polymer electrolyte-containing Li Ni oxide
for secondary Li battery cathode)

IT Battery cathodes

Battery electrolytes

Polymer electrolytes

(porous polymer electrolyte-containing Li Ni oxide for
secondary Li battery cathode)

IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
(porous polymer electrolyte-containing Li Ni oxide for
secondary Li battery cathode)

IT 12031-65-1, Lithium nickel oxide (LiNiO_2) 39336-10-2, Iron lithium
nickel oxide 131344-56-4, Cobalt lithium nickel oxide 152991-98-5,
Aluminum lithium nickel oxide 162684-16-4, Lithium manganese nickel
oxide 191538-05-3, Copper lithium nickel oxide 195881-00-6
, Lithium nickel phosphorus oxide 249756-69-2, Boron lithium nickel
oxide 267009-80-3, Lithium nickel fluoride oxide
(porous polymer electrolyte-containing Li Ni oxide for
secondary Li battery cathode)

L20 ANSWER 27 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:248360 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 132:267531

TITLE: Inorganic-organic composite solid polymer
electrolytes

AUTHOR(S): Abraham, K. M.; Koch, V. R.; Blakley, T. J.

CORPORATE SOURCE: Covalent Associates, Incorporated, Woburn, MA,
01801, USA

SOURCE: Journal of the Electrochemical Society (
2000), 147(4), 1251-1256

CODEN: JESQAN; ISSN: 0013-4651

PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

ED Entered STN: 19 Apr 2000

AB Inorg.-organic composite solid polymer electrolytes (CSPEs) have been prepared from the poly(ethylene oxide) (PEO)-like electrolytes of the general formula polyvinylidene fluoride-hexafluoropropylene (PVdF-HFP)-PEOn-LiX and Li+-conducting ceramic powders. In the PEO-like electrolytes, PVdF-HFP is the copolymer of PVdF and HFP, PEOn is a nonvolatile oligomeric polyethylene oxide of .apprx.400 g/mol mol. weight, and LiX is lithium bis(trifluoroethylsulfonyl) imide. Two types of inorg. oxide ceramic powders were used: a highly Li+-conducting material of the composition 14 mol % Li2O-9Al2O3-38TiO2-39P2O5, and the poorly Li+-conducting Li-silicates Li4-xMxSiO4 where M is Ca or Mg and x is 0 or 0.05. The composite electrolytes can be prepared as thin membranes in which the Li+ conductivity and good mech. strength of the Li+-conducting inorg. ceramics are complemented by the structural flexibility and high conductivity of organic polymer electrolytes. Excellent electrochem. and thermal stabilities have been demonstrated for the electrolyte films. Li//composite electrolyte //LiCoO2 rechargeable cells have been fabricated and cycled at room temperature and 50°C.

IT 186088-00-6, Aluminum lithium phosphorus titanium oxide
(inorg.-organic composite solid polymer electrolytes for
lithium batteries)

RN 186088-00-6 HCAPLUS

CN Aluminum lithium phosphorus titanium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Ti	x	7440-32-6
Li	x	7439-93-2
Al	x	7429-90-5
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology) Section cross-reference(s): 38, 57, 72	
ST	solid polymer composite electrolyte lithium battery; polyethylene oxide vinylidene fluoride hexafluoropropylene copolymer; ceramic powder lithium conducting electrolyte; lithium calcium magnesium silicate electrolyte	
IT	Ionic conductivity (inorg.-organic composite solid polymer electrolytes for lithium batteries)	
IT	Polyoxyalkylenes, uses (inorg.-organic composite solid polymer electrolytes for lithium batteries)	
IT	1344-28-1, Alumina, uses 12057-24-8, Lithium oxide, uses 13463-67-7, Titania, uses (ceramic material containing; inorg.-organic composite solid polymer electrolytes for lithium batteries)	
IT	9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 13453-84-4, Lithium silicate 13453-84-4D, calcium doped 13453-84-4D, magnesium doped 25322-68-3 132843-44-8, Lithium bis(pentafluoroethylsulfonyl)imide 186088-00-6, Aluminum lithium phosphorus titanium oxide (inorg.-organic composite solid polymer electrolytes for lithium batteries)	

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR

THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L20 ANSWER 28 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1999:471937 HCAPLUS Full-text
 DOCUMENT NUMBER: 131:124675
 TITLE: Carbon dioxide gas sensor
 INVENTOR(S): Chou, Ekisan; Chiba, Kazunori; Tagawa, Hiroaki;
 Mizusaki, Junichiro
 PATENT ASSIGNEE(S): Akebono Brake Research and Development Center,
 Ltd., Japan; Foundation for Scientific Technology
 Promotion
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11201937	A	1999/07/30	JP 1998-4053	19980112
JP 3984347	B2	2007/10/03	<--	
PRIORITY APPLN. INFO.:			JP 1998-4053	19980112
			<--	

ED Entered STN: 02 Aug 1999

AB The title sensor is characterized by having miniature size, stable sensor emf with time, and good detection precision. The sensor comprises a solid electrolyte substrate made of alkali or alkaline earth metal ion conductive oxide, a working electrode which maintains a dissociation equilibrium with CO₂, and a solid standard electrode. The solid standard electrode is made of a 2 phases mix. of transition metal oxide containing alkali or alkaline earth metal of same elec. conductivity with the solid electrolyte.

IT 233598-60-2

(solid electrolyte carbon dioxide gas sensor)

RN 233598-60-2 HCAPLUS

CN Aluminum lithium titanium metaphosphate oxide
 (Al_{0.16}Li_{0.27}Ti_{0.4}(PO₃)_{0.800.77}) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.77	17778-80-2
O3P	0.8	15389-19-2
Ti	0.4	7440-32-6
Li	0.27	7439-93-2
Al	0.16	7429-90-5

IC ICM G01N027-416

ICS G01N027-406

CC 79-2 (Inorganic Analytical Chemistry)

Section cross-reference(s): 59, 72

ST solid electrolyte carbon dioxide gas sensor

IT Glass, uses

(lithium; solid electrolyte carbon dioxide gas sensor)

IT Air analysis

Electrode reaction

Gas analysis

Solid electrolyte gas sensors

(solid electrolyte carbon dioxide gas sensor)

IT Alkali metals, uses
Alkaline earth metals
Transition metal oxides
(solid electrolyte carbon dioxide gas sensor)

IT 124-38-9, Carbon dioxide, analysis
(solid electrolyte carbon dioxide gas sensor)

IT 554-13-2, Lithium carbonate 7439-89-6, Iron, uses 7439-93-2,
Lithium, uses 7440-09-7, Potassium, uses 7440-23-5, Sodium, uses
7440-24-6, Strontium, uses 7440-32-6, Titanium, uses 7440-33-7,
Tungsten, uses 7440-39-3, Barium, uses 7440-47-3, Chromium, uses
7440-50-8, Copper, uses 7440-57-5, Gold, uses 7440-62-2, Vanadium,
uses 7440-67-7, Zirconium, uses 7440-70-2, Calcium, uses
12022-46-7, Lithium iron oxide (LiFeO₂) 12023-70-0, Lithium iron
oxide (LiFe₂O₄) 77641-62-4, Nasicon 233598-68-2
(solid electrolyte carbon dioxide gas sensor)

IT 10377-52-3 37220-89-6, Lithium aluminate
(solid electrolyte carbon dioxide gas sensor)

L20 ANSWER 29 OF 40 HCAPLUS COPYRIGHT 2008 ACS ON STN
ACCESSION NUMBER: 1999:439828 HCAPLUS Full-text
DOCUMENT NUMBER: 131:110621
TITLE: Carbon dioxide gas sensor
INVENTOR(S): Chang, Ki-Chan; Kobayashi, Shigeaki; Tagawa,
Hiroaki; Mizusaki, Junichiro
PATENT ASSIGNEE(S): Akebono Brake Research and Development Center,
Ltd., Japan; Foundation for Scientific Technology
Promotion
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11190718	A	19990713	JP 1997-359198	19971226
			<--	
PRIORITY APPLN. INFO.:			JP 1997-359198	19971226
			<--	

ED Entered STN: 19 Jul 1999

AB The title sensor is characterized by having no time-dependent change of sensor electromotive force and is suited for precise determination of CO₂ concentration in gas samples. The sensor comprises a solid electrolyte substrate made of alkali metal ion conductive oxide, a working electrode made of metal carbonate which keeps a dissociation equilibrium with CO₂, and a standard solid electrode, made of non-stoichiometric transition metal oxides containing alkali metal of same elec. conductivity with the solid electrolyte.

IT 231950-35-9
(lithium glass; carbon dioxide gas sensor for environmental anal.)
RN 231950-35-9 HCAPLUS
CN Aluminum lithium titanium metaphosphate oxide
(Al₁₅.6Li₂₆.6Ti₄₀(PO₃)₇₉.8O₇₆.8) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
O	76.8	17778-80-2
O3P	79.8	15389-19-2

Ti		40		7440-32-6
Li		26.6		7439-93-2
Al		15.6		7429-90-5

IC ICM G01N027-416
ICS G01N027-406

CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): 59, 72

IT Air analysis
Environmental analysis
Gas analysis
Solid electrolyte gas sensors
(carbon dioxide gas sensor for environmental anal.)

IT 231950-35-9
(lithium glass; carbon dioxide gas sensor for environmental anal.)

L20 ANSWER 30 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:111963 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 130:184881
TITLE: Secondary nonaqueous-electrolyte lithium battery

INVENTOR(S): Igawa, Akiko; Tsuruoka, Shigeo; Yoshikawa, Masanori; Muranaka, Yasushi
PATENT ASSIGNEE(S): Hitachi, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 11040153	A	19990212	JP 1997-193612	19970718
			<--	
PRIORITY APPLN. INFO.:			JP 1997-193612	19970718
			<--	

ED Entered STN: 18 Feb 1999

AB In the battery, an anode active mass comprises a C material containing an element which forms a compound with an alkali metal and an element which does not form a compound with an alkali metal, and a cathode active mass comprises AwPvNixMyNzO_2 ($A \geq 1$ alkali metal; $P = \text{Mg, B, P, and/or In}$; $M = \text{Mn, Co, and/or Al}$; $N = \text{Si, Al, Ca, Cu, Sn, Mo, Nb, Y, and/or Bi}$; $w = 0.05-1.2$; $v = 0.0001-0.2$; $x = 0.5-0.95$; $y = 0.005-0.5$; $z = 0-0.2$) and a mixture of graphite having $L_c \geq 150 \text{ \AA}$ and carbon black having sp. surface area $\geq 50 \text{ m}^2/\text{g}$ as elec. conductors. The elements in the C material may form intermetallic compds. or oxides. Decrease in overvoltage during discharge is prevented and the battery shows high-rate performance and has long service life.

IT 177997-09-0, Cobalt lithium nickel phosphorus oxide

220589-93-5 220589-94-6 220589-95-7
220589-96-8 220589-97-9 220589-98-0
220589-99-1 220590-00-1 220590-01-2
220590-02-3 220590-03-4

(Li battery having C material anode containing additive and mixed oxide cathode containing graphite/carbon black mixture)

RN 177997-09-0 HCAPLUS

CN Cobalt lithium nickel phosphorus oxide (CA INDEX NAME)

Component		Ratio		Component
				Registry Number

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Co	x	7440-48-4
Ni	x	7440-02-0
Li	x	7439-93-2

RN 220589-93-5 HCAPLUS

CN Aluminum cobalt lithium magnesium nickel phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Co	x	7440-48-4
Ni	x	7440-02-0
Mg	x	7439-95-4
Li	x	7439-93-2
Al	x	7429-90-5

RN 220589-94-6 HCAPLUS

CN Cobalt lithium magnesium manganese nickel phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Co	x	7440-48-4
Ni	x	7440-02-0
Mn	x	7439-96-5
Mg	x	7439-95-4
Li	x	7439-93-2

RN 220589-95-7 HCAPLUS

CN Aluminum cobalt lithium magnesium manganese nickel phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Co	x	7440-48-4
Ni	x	7440-02-0
Mn	x	7439-96-5
Mg	x	7439-95-4
Li	x	7439-93-2
Al	x	7429-90-5

RN 220589-96-8 HCAPLUS

CN Aluminum cobalt lithium magnesium manganese nickel phosphorus silicon oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
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O		x		17778-80-2
P		x		7723-14-0
Co		x		7440-48-4
Si		x		7440-21-3
Ni		x		7440-02-0
Mn		x		7439-96-5
Mg		x		7439-95-4
Li		x		7439-93-2
Al		x		7429-90-5

RN 220589-97-9 HCAPLUS

CN Aluminum calcium cobalt lithium magnesium manganese nickel phosphorus oxide (CA INDEX NAME)

Component		Ratio		Component Registry Number

O		x		17778-80-2
P		x		7723-14-0
Ca		x		7440-70-2
Co		x		7440-48-4
Ni		x		7440-02-0
Mn		x		7439-96-5
Mg		x		7439-95-4
Li		x		7439-93-2
Al		x		7429-90-5

RN 220589-98-0 HCAPLUS

CN Aluminum cobalt copper lithium magnesium manganese nickel phosphorus oxide (CA INDEX NAME)

Component		Ratio		Component Registry Number

O		x		17778-80-2
P		x		7723-14-0
Cu		x		7440-50-8
Co		x		7440-48-4
Ni		x		7440-02-0
Mn		x		7439-96-5
Mg		x		7439-95-4
Li		x		7439-93-2
Al		x		7429-90-5

RN 220589-99-1 HCAPLUS

CN Aluminum cobalt lithium magnesium manganese nickel phosphorus tin oxide (CA INDEX NAME)

Component		Ratio		Component Registry Number

O		x		17778-80-2
P		x		7723-14-0
Co		x		7440-48-4
Sn		x		7440-31-5
Ni		x		7440-02-0
Mn		x		7439-96-5
Mg		x		7439-95-4
Li		x		7439-93-2
Al		x		7429-90-5

RN 220590-00-1 HCAPLUS

CN Aluminum cobalt lithium magnesium manganese molybdenum nickel
phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Co	x	7440-48-4
Ni	x	7440-02-0
Mo	x	7439-98-7
Mn	x	7439-96-5
Mg	x	7439-95-4
Li	x	7439-93-2
Al	x	7429-90-5

RN 220590-01-2 HCAPLUS

CN Aluminum cobalt lithium magnesium manganese nickel niobium phosphorus
oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Co	x	7440-48-4
Nb	x	7440-03-1
Ni	x	7440-02-0
Mn	x	7439-96-5
Mg	x	7439-95-4
Li	x	7439-93-2
Al	x	7429-90-5

RN 220590-02-3 HCAPLUS

CN Aluminum cobalt lithium magnesium manganese nickel phosphorus yttrium
oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Y	x	7440-65-5
Co	x	7440-48-4
Ni	x	7440-02-0
Mn	x	7439-96-5
Mg	x	7439-95-4
Li	x	7439-93-2
Al	x	7429-90-5

RN 220590-03-4 HCAPLUS

CN Aluminum bismuth cobalt lithium magnesium manganese nickel phosphorus
oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2

P		x		7723-14-0
Bi		x		7440-69-9
Co		x		7440-48-4
Ni		x		7440-02-0
Mn		x		7439-96-5
Mg		x		7439-95-4
Li		x		7439-93-2
Al		x		7429-90-5

IC ICM H01M004-58
ICS H01M004-02; H01M004-62; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 57, 76
ST mixed oxide cathode lithium battery; nonaq electrolyte
lithium battery; carbon material additive anode lithium battery;
graphite elec conductor cathode lithium battery; black carbon elec
conductor cathode battery
IT 177997-09-0, Cobalt lithium nickel phosphorus oxide
177997-12-5, Boron cobalt lithium nickel oxide 177997-14-7, Cobalt
indium lithium nickel oxide 180997-14-2, Cobalt lithium magnesium
nickel oxide 207803-50-7, Aluminum cobalt lithium magnesium nickel
oxide 220589-93-5 220589-94-6 220589-95-7
220589-96-8 220589-97-9 220589-98-0
220589-99-1 220590-00-1 220590-01-2
220590-02-3 220590-03-4 220590-04-5 220590-05-6
220590-06-7 220590-07-8
(Li battery having C material anode containing additive and mixed oxide
cathode containing graphite/carbon black mixture)

L20 ANSWER 31 OF 40 HCAPLUS COPYRIGHT 2008 ACS ON STN
ACCESSION NUMBER: 1998:811852 HCAPLUS Full-text
DOCUMENT NUMBER: 130:98051
TITLE: Cathode materials and nonaqueous-
electrolyte secondary batteries using them
INVENTOR(S): Miura, Kaoru
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 10334914	A	19981218	JP 1997-140594	19970529
			<--	
CN 1202743	A	19981223	CN 1998-115268	19980527
			<--	
CN 1123942	C	20031008		
US 6093505	A	20000725	US 1998-85110	19980528
			<--	

PRIORITY APPLN. INFO.: JP 1997-140594 A 19970529
<--

ED Entered STN: 30 Dec 1998

AB The title cathode materials are manufactured from LiMn_2O_4 ($x = 0-3$) in which
a part of O is substituted by anion having larger absolute value than O.
Nonaq.-electrolyte secondary batteries using cathodes from the materials are
also claimed. The batteries have high capacity.

IT 219527-66-9P, Lithium manganese oxide phosphide ($\text{LiMn}_2\text{O}_2\text{P}_2$)

(cathodes from anion-containing Li Mn oxide for secondary battery)
 RN 219527-66-9 HCAPLUS
 CN Lithium manganese oxide phosphide (LiMn2O2P2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
P	2	7723-14-0
Mn	2	7439-96-5
Li	1	7439-93-2

IC ICM H01M004-58
 ICS C01G045-00; H01M004-02; H01M010-40
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT 219527-65-8P, Lithium manganese nitride oxide (LiMn2N2O2)
 219527-66-9P, Lithium manganese oxide phosphide (LiMn2O2P2)
 (cathodes from anion-containing Li Mn oxide for secondary battery)

L20 ANSWER 32 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:238170 HCAPLUS Full-text

DOCUMENT NUMBER: 128:277451

ORIGINAL REFERENCE NO.: 128:54795a,54798a

TITLE: Effect of Ti doping on the ionic conductivity of
 Li3PO4-xNx thin film

AUTHOR(S): Lee, J. H.; Lee, Y. K.; Park, J. W.

CORPORATE SOURCE: Dept. of Metallurgical Engineering, Hanyang
 University, Seoul, 133-791, S. Korea

SOURCE: Han'guk Pyomyon Konghak Hoechi (1997),
 30(4), 255-261

CODEN: HPKHEL; ISSN: 1225-8024

PUBLISHER: Korean Institute of Surface Engineering

DOCUMENT TYPE: Journal

LANGUAGE: Korean

ED Entered STN: 27 Apr 1998

AB Thin film batteries can be used as a micro power source for electronic devices in which minute power is needed. Li phosphorous oxynitride (LIPON) thin films were deposited as an electrolyte for Li ion batteries using RF magnetron sputtering of Li phosphate in N2. Ti was also added into the LIPON films as a 2nd network former to enhance the ionic conductivity of the films. The optimum conditions for LIPON film deposition were sought and the electrolyte with the conductivity of 2.5×10^{-6} S/cm was obtained at the condition of RF power 4.4 W/cm², process pressure 10 mtorr and pure N ambience. Also, the conductivity of LIPON films was increased from 2.5×10^{-6} S/cm to 8.6×10^{-6} S/cm by the doping of 2.4 atomic% Ti. Also by adding Ti to LIPON films, Li content was increased and N content that reported having the crosslinking effect on LIPON films was also increased as confirmed by XPS.

IT 205496-31-7P, Lithium titanium nitrate oxide phosphide
 (Li0.87Ti0.07(NO3)0.18O0.6P)

(ionic conductivity of sputtered titanium-doped lithium phosphorous oxynitride films for lithium ion batteries)

RN 205496-31-7 HCAPLUS

CN Lithium titanium nitrate oxide phosphide (Li0.87Ti0.07(NO3)0.18O0.6P)
 (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	0.6	17778-80-2
NO3	0.18	14797-55-8

P		1		7723-14-0
Ti		0.07		7440-32-6
Li		0.87		7439-93-2

CC 76-1 (Electric Phenomena)
 Section cross-reference(s): 52
 IT Battery electrolytes
 Dopants
 Ionic conductivity
 Sputtering
 (ionic conductivity of sputtered titanium-doped lithium phosphorous oxynitride films for lithium ion batteries)
 IT 205496-30-6P, Lithium nitrate oxide phosphide (Li0.55(NO3)0.1300.73P)
 205496-31-7P, Lithium titanium nitrate oxide phosphide
 (Li0.87Ti0.07(NO3)0.1800.6P)
 (ionic conductivity of sputtered titanium-doped lithium phosphorous oxynitride films for lithium ion batteries)

L20 ANSWER 33 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:28232 HCAPLUS Full-text
 DOCUMENT NUMBER: 128:92074
 ORIGINAL REFERENCE NO.: 128:17933a,17936a
 TITLE: Glass-ceramics having high lithium ion conductivity
 INVENTOR(S): Fu, Jie
 PATENT ASSIGNEE(S): Kabushiki Kaisha Ohara, Japan
 SOURCE: U.S., 6 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 3
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5702995	A	19971230	US 1996-741704	19961031
JP 09142874	A	19970603	JP 1995-320971	19951115
JP 3126306	B2	20010122		
JP 10097811	A	19980414	JP 1997-38303	19970206
JP 3012211	B2	20000221		
EP 857699	A2	19980812	EP 1997-110106	19970620
EP 857699	A3	19980916		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
EP 1028094	A2	20000816	EP 2000-110476	19970620
EP 1028094	A3	20000920		
EP 1028094	B1	20030521		
R: DE, FR, GB				
JP 2000026135	A	20000125	JP 1999-149686	19990528
JP 4090148	B2	20080528		
US 20030205467	A1	20031106	US 2003-462450	20030616
US 7211532	B2	20070501		
PRIORITY APPLN. INFO.:			JP 1995-320971	A 19951115

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JP 1996-115694      A  19960412
<--
JP 1997-38303      A  19970206
<--
JP 1996-48379      A  19960209
<--
US 1996-741704     A2 19961031
<--
EP 1997-110106     A3 19970620
<--
US 1997-923233     B1 19970904
<--
US 2000-614948     A1 20000712
<--

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ED Entered STN: 17 Jan 1998

AB Glass-ceramics having a high-lithium ion conductivity comprise P2O5 38-40, TiO2 25-45, M2O3 (where M is Al or Ga) 5-15, and Li2O 10-20 mol.% and contain $\text{Li}1+x(\text{Al},\text{Ga})x\text{Ti}2-x(\text{PO}4)3$ (where X is 0-0.8) as a main crystal phases. The glass-ceramics having a high-lithium ion conductivity also comprise P2O5 26-40, SiO2 0.5-12, TiO2 30-45, M2O3 (where M is Al or Ga) 5-10, and Li2O 10-18 mol.% and contain $\text{Li}1+x+y\text{MxTi}2-x\text{Si}y\text{P}3-y\text{O}12$ (where $0 < X \leq 0.4$ and $0 < Y \leq 0.6$) as a main crystal phase.

IT 201010-46-0P 201010-47-1P

(crystal phase; glass-ceramics having high lithium ion conductivity)

RN 201010-46-0 HCAPLUS

CN Aluminum gallium lithium phosphorus titanium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Ga	x	7440-55-3
Ti	x	7440-32-6
Li	x	7439-93-2
Al	x	7429-90-5

RN 201010-47-1 HCAPLUS

CN Aluminum gallium lithium phosphorus silicon titanium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Ga	x	7440-55-3
Ti	x	7440-32-6
Si	x	7440-21-3
Li	x	7439-93-2
Al	x	7429-90-5

IC ICM C03C010-02

ICS C03C004-14

INCL 501010000

CC 57-2 (Ceramics)

Section cross-reference(s): 76

ST lithium ion cond high glass ceramic; aluminum lithium gallium phosphorus titanium oxide; solid electrolyte lithium ion

cond
 IT 201010-46-0P 201010-47-1P 201010-48-2P
 201010-49-3P
 (crystal phase; glass-ceramics having high lithium ion conductivity)

L20 ANSWER 34 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:762551 HCAPLUS Full-text

DOCUMENT NUMBER: 128:66727

ORIGINAL REFERENCE NO.: 128:12959a,12962a

TITLE: Mass-spectrometric study of neutral and ionic
 vapor components over Li4TiP2O9 and Na4TiP2O9
 solid electrolytes

AUTHOR(S): Pogrebnoi, A. M.; Kudish, L. S.; Krasnov, K. S.
 CORPORATE SOURCE: Ivanov. Gos. Khim.- Tekh. Akad., Ivanovo, Russia

SOURCE: Zhurnal Fizicheskoi Khimii (1997),
 71(2), 210-215

CODEN: ZFKHA9; ISSN: 0044-4537

PUBLISHER: MAIK Nauka

DOCUMENT TYPE: Journal

LANGUAGE: Russian

ED Entered STN: 08 Dec 1997

AB The basic neutral components are: LiPO3, LiPO2, PO, O2, P, Pn (n = 2-4); the
 ionic components are predominantly alkali-metal pos. ions. The ion work
 functions (eV) were determined using the temperature dependence of the ionic
 currents: (1) for Li4TiP2O9 - 2.9±0.1 (Li+); 2.8±0.1 (Na+); 2.8±0.2 (K+);
 2.5±0.2 (Rb+); 2.6±0.2 (Cs+); for Na4TiP2O9 - 2.1±0.1 (Na+); 2.2±0.1 (K+);
 8.8±0.9 (OH-); 7.5±0.5 (PO21-); 6.5±2 (PO3-). The partial pressures of O2 and
 water were calculated using equilibrium consts. of the ion-mol. equilibrium:
 2PO3- = 2PO2- + O2 and 2OH- = O- + H2O.

IT 200341-13-5, Lithium titanium (diphosphate) oxide
 (Li4Ti(P2O7)O2)
 (neutral and ionic vapor components over solid Li4TiP2O9 and
 Na4TiP2O9, ion work functions, and partial pressures)

RN 200341-13-5 HCAPLUS

CN Lithium titanium (diphosphate) oxide (Li4Ti(P2O7)O2) (CA INDEX NAME)

Component	Ratio	Component	Registry Number
O	2		17778-80-2
O7P2	1		14000-31-8
Ti	1		7440-32-6
Li	4		7439-93-2

CC 65-6 (General Physical Chemistry)

Section cross-reference(s): 68, 69, 76

IT 7732-18-5, Water, properties 7782-44-7, Oxygen, properties
 14280-30-9, Hydroxide, properties 15389-19-2, Metaphosphate (PO31-)
 17341-24-1, Lithium(1+), properties 17341-25-2, Sodium(1+),
 properties 18459-37-5, Cesium(1+), properties 20499-58-5,
 Metaphosphite 22537-38-8, Rubidium(1+), properties 162355-30-8,
 Sodium titanium (diphosphate) oxide (Na4Ti(P2O7)O2)
 200341-13-5, Lithium titanium (diphosphate) oxide
 (Li4Ti(P2O7)O2)

(neutral and ionic vapor components over solid Li4TiP2O9 and
 Na4TiP2O9, ion work functions, and partial pressures)

L20 ANSWER 35 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:609764 HCAPLUS Full-text

DOCUMENT NUMBER: 127:250694

ORIGINAL REFERENCE NO.: 127:48951a, 48954a
 TITLE: Nonaqueous electrolyte lithium secondary battery and its lithium-nickel mixed oxide cathode for suppression of self discharge
 INVENTOR(S): Yamaura, Kiyoshi
 PATENT ASSIGNEE(S): Sony Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09231975	A	19970905	JP 1996-56914	19960220
			<--	
			JP 1996-56914	19960220
			<--	

ED Entered STN: 24 Sep 1997
 AB The cathode is made of a Li-Ni mixed oxide containing P [0.003< (P/Li) <0.1, atomic ratio]. The battery using the cathode suppresses self discharge and has small capacity loss even in storage at high temperature
 IT 195881-00-6P, Lithium nickel phosphorus oxide
 (cathode; nonaq. electrolyte lithium secondary battery
 lithium-nickel mixed oxide cathode for suppressed self discharge at high temperature)
 RN 195881-00-6 HCAPLUS
 CN Lithium nickel phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Ni	x	7440-02-0
Li	x	7439-93-2

IC ICM H01M004-58
 ICS H01M004-02; H01M010-40
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST nonaq electrolyte lithium battery cathode; lithium nickel phosphorus oxide battery cathode
 IT Battery cathodes
 (nonaq. electrolyte lithium secondary battery
 lithium-nickel mixed oxide cathode for suppressed self discharge at high temperature)
 IT 39300-70-4P, Lithium nickel oxide
 (cathode, phosphorus-containing; nonaq. electrolyte lithium secondary battery lithium-nickel mixed oxide cathode for suppressed self discharge at high temperature)
 IT 195881-00-6P, Lithium nickel phosphorus oxide
 (cathode; nonaq. electrolyte lithium secondary battery
 lithium-nickel mixed oxide cathode for suppressed self discharge at high temperature)
 IT 7723-14-0, Phosphorus, uses
 (lithium nickel oxide containing; nonaq. electrolyte lithium secondary battery lithium-nickel mixed oxide cathode for suppressed self discharge at high temperature)
 IT 1310-65-2, Lithium hydroxide 1313-99-1, Nickel oxide, processes

10377-52-3, Lithium phosphate
 (raw material for mixed oxide; nonaq. electrolyte lithium
 secondary battery lithium-nickel mixed oxide cathode for suppressed
 self discharge at high temperature)

L20 ANSWER 36 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1994:546570 HCAPLUS Full-text
 DOCUMENT NUMBER: 121:146570
 ORIGINAL REFERENCE NO.: 121:26257a,26260a
 TITLE: Ceramic solid electrolyte obtained by
 sintering
 INVENTOR(S): Nakayama, Susumu; Kuroshima, Hiroshi
 PATENT ASSIGNEE(S): Shinagawa Refractories Co, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06080462	A	19940322	JP 1992-231856	19920831
			<--	
PRIORITY APPLN. INFO.:			JP 1992-231856	19920831
			<--	

ED Entered STN: 17 Sep 1994

AB The solid electrolyte is obtained by mixing a ceramic electrolyte with high
 elec. conductivity with ≤40 weight% ionic conductor electrolyte containing the
 same ions as those of the ceramic electrolyte and more glass components and
 sintering. The electrolyte obtained by sintering at 900-1100° showed high
 elec. conductivity

IT 157322-04-8P 157322-07-1P 157322-08-2P,
 Indium lithium phosphorus titanium oxide 157322-09-3P
 157322-10-6P 157322-11-7P 157322-12-8P
 (ceramics, solid electrolyte, preparation of, by low-temperature
 sintering, with high elec. conductivity)

RN 157322-04-8 HCAPLUS

CN Indium lithium phosphorus samarium silicon titanium oxide (CA INDEX
 NAME)

Component	Ratio	Component Registry Number
O	x	1778-80-2
P	x	7723-14-0
In	x	7440-74-6
Ti	x	7440-32-6
Si	x	7440-21-3
Sm	x	7440-19-9
Li	x	7439-93-2

RN 157322-07-1 HCAPLUS

CN Aluminum indium lithium phosphorus silicon titanium oxide (CA INDEX
 NAME)

Component	Ratio	Component Registry Number
O	x	1778-80-2

10/551,935

P		x		7723-14-0
In		x		7440-74-6
Ti		x		7440-32-6
Si		x		7440-21-3
Li		x		7439-93-2
Al		x		7429-90-5

RN 157322-08-2 HCAPLUS

CN Indium lithium phosphorus titanium oxide (CA INDEX NAME)

Component		Ratio		Component Registry Number
=====	+	=====	+	=====
O		x		17778-80-2
P		x		7723-14-0
In		x		7440-74-6
Ti		x		7440-32-6
Li		x		7439-93-2

RN 157322-09-3 HCAPLUS

CN Aluminum indium lithium phosphorus titanium oxide (CA INDEX NAME)

Component		Ratio		Component Registry Number
=====	+	=====	+	=====
O		x		17778-80-2
P		x		7723-14-0
In		x		7440-74-6
Ti		x		7440-32-6
Li		x		7439-93-2
Al		x		7429-90-5

RN 157322-10-6 HCAPLUS

CN Boron indium lithium phosphorus titanium oxide (CA INDEX NAME)

Component		Ratio		Component Registry Number
=====	+	=====	+	=====
O		x		17778-80-2
P		x		7723-14-0
In		x		7440-74-6
B		x		7440-42-8
Ti		x		7440-32-6
Li		x		7439-93-2

RN 157322-11-7 HCAPLUS

CN Indium lithium phosphorus silicon titanium oxide (CA INDEX NAME)

Component		Ratio		Component Registry Number
=====	+	=====	+	=====
O		x		17778-80-2
P		x		7723-14-0
In		x		7440-74-6
Ti		x		7440-32-6
Si		x		7440-21-3
Li		x		7439-93-2

RN 157322-12-8 HCAPLUS

CN Aluminum lithium phosphorus silicon zirconium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Zr	x	7440-67-7
Si	x	7440-21-3
Li	x	7439-93-2
Al	x	7429-90-5

IC	ICM C04B035-00	
	ICS H01B001-06	
CC	76-2 (Electric Phenomena)	
	Section cross-reference(s): 57	
ST	ceramic oxide electrolyte solid sintering	
IT	Electric conductors, ceramic	
	(oxide, manufacture of, by low-temperature sintering, with high elec. conductivity,	
	for solid electrolyte)	
IT	6834-92-0 7601-54-9, Sodium phosphate 10102-24-6, Lithium silicon oxide (Li2SiO3) 10377-52-3, Lithium phosphate 12003-51-9	
	12003-67-7, Lithium aluminum oxide (LiAlO2) 13465-88-8 13465-97-9, Silver phosphorus oxide (Ag4P2O7) 13497-94-4, Silver vanadium oxide (AgVO3) 16625-98-2 19497-94-0 22307-58-0 28132-50-5, Sodium zirconium phosphate [Na2Zr(PO4)2] 34370-43-9 58572-20-6, Sodium zirconium phosphate silicate (Na3Zr2(PO4)(SiO4)2) 76572-26-4	
	129039-87-8, Silver zirconium phosphate silicate (Ag3Zr2(PO4)(SiO4)2) 150232-17-0, Indium lithium titanium phosphate (In0.4Li1.4Ti1.6(PO4)3) 157281-79-3, Lithium samarium oxide silicate (Li4Sm2O(SiO4)2) 157281-80-6, Gadolinium sodium oxide silicate (Gd2Na4O(SiO4)2)	
	(ceramics, low-temperature sintering of, solid electrolyte from)	
IT	157322-04-8P 157322-05-9P 157322-06-0P	
	157322-07-1P 157322-08-2P, Indium lithium phosphorus titanium oxide 157322-09-3P 157322-10-6P	
	157322-11-7P 157322-12-8P 157322-13-9P	
	157322-14-0P 157322-15-1P 157322-16-2P 157322-17-3P	
	(ceramics, solid electrolyte, preparation of, by low-temperature sintering, with high elec. conductivity)	

L20 ANSWER 37 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1994:168922 HCAPLUS Full-text

DOCUMENT NUMBER: 120:168922

ORIGINAL REFERENCE NO.: 120:29731a,29734a

TITLE: Lithium batteries having high-capacity cathodes

INVENTOR(S): Kamauchi, Masaharu

PATENT ASSIGNEE(S): Mitsubishi Cable Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05325961	A	19931210	JP 1992-124595	19920518
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PRIORITY APPLN. INFO.:			JP 1992-124595	19920518

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ED Entered STN: 02 Apr 1994
 AB In the batteries having Li or Li alloy anodes, cathodes, and electrolytes, cathode active masses comprise composite oxides at least containing Mn and P. The batteries have high energy d. giving high electromotive force and discharge voltage.
 IT 138758-08-4, Lithium manganese oxide phosphate (cathodes containing, in lithium batteries, for high energy d.)
 RN 138758-08-4 HCAPLUS
 CN Lithium manganese phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
P	x	7723-14-0
Mn	x	7439-96-5
Li	x	7439-93-2

IC ICM H01M004-58
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT 138758-08-4, Lithium manganese oxide phosphate 153593-60-3,
 Manganese phosphorus oxide ((Mn,O)O2)
 (cathodes containing, in lithium batteries, for high energy d.)

L20 ANSWER 38 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1994:139214 HCAPLUS Full-text

DOCUMENT NUMBER: 120:139214

ORIGINAL REFERENCE NO.: 120:24455a,24458a

TITLE: Nonaqueous-electrolyte secondary

batteries with improved anodes
 INVENTOR(S): Yamamoto, Juji; Furukawa, Saneshiro; Nishio, Koji;
 Noma, Toshuki; Kurokawa, Hiroshi; Uehara, Mayumi

PATENT ASSIGNEE(S): Sanyo Electric Co, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05283077	A	19931029	JP 1992-108908	19920331
JP 3152497	B2	20010403		
PRIORITY APPLN. INFO.:			JP 1992-108908	19920331

ED Entered STN: 19 Mar 1994

AB The batteries use Li or Li-intercalatable anodes, and cathodes of $\text{Li}_x\text{M}_y\text{MnO}_z$ (M = B, Si, P, Ga, Ge, As, Se, In, Sn, Sb, Te, Pb, Po, and/or At; x, y, z = pos. number; preferably $0.04 \leq y \leq 1.0$). Preferably, M is B. Optionally, the cathodes contain $\text{Li}_2\text{B}_4\text{O}_7$. The batteries prevent internal resistance.

IT 138758-08-4, Lithium manganese oxide phosphate (cathodes, for nonaq.-electrolyte batteries)

RN 138758-08-4 HCAPLUS

CN Lithium manganese phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number

=====+=====			
O		x	17778-80-2
P		x	7723-14-0
Mn		x	7439-96-5
Li		x	7439-93-2

IC ICM H01M004-58
ICS H01M004-02; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 138758-08-4, Lithium manganese oxide phosphate 153325-75-2,
Lead lithium manganese oxide 153327-00-5, Gallium lithium manganese
oxide 153327-01-6, Germanium lithium manganese oxide 153327-02-7,
Lithium manganese borate oxide 153327-03-8 153327-04-9, Indium
lithium manganese oxide 153327-05-0, Lithium manganese tin oxide
153327-06-1, Antimony lithium manganese oxide 153327-07-2, Lithium
manganese polonium oxide 153385-76-3, Lithium manganese arsenate
oxide 153385-77-4 153385-78-5, Lithium magnesium astatide oxide
153385-79-6, Lithium manganese oxide selenate
(cathodes, for nonaq.-electrolyte batteries)

L20 ANSWER 39 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:63493 HCAPLUS Full-text

DOCUMENT NUMBER: 116:63493

ORIGINAL REFERENCE NO.: 116:10891a,10894a

TITLE: Cathode-active mass for secondary lithium
batteries and their preparation

INVENTOR(S): Yamaura, Junichi; Nishikawa, Yukio; Morita,
Teruyoshi; Eda, Nobuo; Koshina, Hide; Okuno,
Hiromi; Ozaki, Yoshiyuki

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 03119658	A	19910522	JP 1989-259209	19891003
			<--	
JP 3102005	B2	20001023		
PRIORITY APPLN. INFO.:			JP 1989-259209	19891003
			<--	

ED Entered STN: 21 Feb 1992

AB Electrolytic MnO₂, Li₃PO₄ or P₂O₅, and Li₃PO₄ or LiNO₃ are mixed at Mn:P:Li
atomic ratio = 1.00:0.02-0.10:0.10-0.40 and fired at 350-480° in air to give
the cathode-active mass. Li batteries uses these active mass have high energy
d., good storage stability and low-temperature performance.

IT 138758-08-4P, Lithium manganese oxide phosphate
(cathodes, preparation of, for secondary lithium batteries)

RN 138758-08-4 HCAPLUS

CN Lithium manganese phosphorus oxide (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
=====+=====		
O	x	17778-80-2
P	x	7723-14-0
Mn	x	7439-96-5

Li | x | 7439-93-2

IC ICM H01M004-50
 ICS H01M010-40
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT 133758-08-4P, Lithium manganese oxide phosphate
 (cathodes, preparation of, for secondary lithium batteries)

L20 ANSWER 40 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1991:176333 HCAPLUS Full-text

DOCUMENT NUMBER: 114:176333

ORIGINAL REFERENCE NO.: 114:29559a,29562a

TITLE: Solid electrolyte and its preparation

INVENTOR(S): Yamamura, Koji; Takada, Kazunori; Taniguchi,
 Noboru; Kondo, Shiigo

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02225310	A	19900907	JP 1989-43759	19890223

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PRIORITY APPLN. INFO.: JP 1989-43759 19890223

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ED Entered STN: 03 May 1991

AB A Li ion conductive solid electrolyte is $\text{Li}1-\text{xMxTi}2-\text{x}(\text{PO}4)3$ ($\text{M} = \text{B}, \text{Al}, \text{Ga}, \text{In}, \text{Tl}, \text{Sc}, \text{Y}, \text{La}, \text{Ce}, \text{Pr}$) and optionally a metal oxide is added to the phosphate and its preparation involves making the phosphate amorphous and annealing the resulting phosphate. The solid electrolyte is prepared by adding H_3PO_4 to ethanol containing salts of Li, Ti, and M, neutralizing the solution by alkali to give a mainly Li_3PO_4 and $\text{Ti}_3(\text{PO}_4)_4$ mixture, and sintering the mixture. The electrolyte is useful for solid electrolyte batteries, elec. double layer capacitors, electrochromic display, etc. The ion conductivity of the phosphate compound depends on its grain size and grain size uniformity.

IT 133139-17-0

(solid electrolyte of, lithium ion conductive, for
 battery and capacitor and display device)

RN 133139-17-0 HCAPLUS

CN Lithium titanium borate metaphosphate oxide
 ($\text{Li}1.3\text{Ti}1.7(\text{BO}_3)0.3(\text{PO}_3)302.1$) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2.1	17778-80-2
O3P	3	15389-19-2
BO3	0.3	14213-97-9
Ti	1.7	7440-32-6
Li	1.3	7439-93-2

IC ICM C01B025-45

ICS C01B035-14; H01B001-06; H01M006-18; H01M010-36

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 52, 74

- ST lithium titanium phosphate ion conductive; battery capacitor display solid electrolyte
- IT Batteries, primary
(lithium ion conductive solid electrolyte for, phosphate compds. as)
- IT Electric capacitors
(double-layer, lithium ion conductive solid electrolyte for, phosphate compds. as)
- IT Optical imaging devices
(electrochromic, lithium ion conductive solid electrolyte for, phosphate compds. as)
- IT 120479-61-0, Aluminum lithium titanium phosphate [Al_{0.3}Li_{1.3}Ti_{1.7}(PO₄)₃] 127689-78-5, Lanthanum lithium titanium phosphate [La_{0.3}Li_{1.3}Ti_{1.7}(PO₄)₃] 127887-18-7, Lithium scandium titanium phosphate [Li_{1.3}Sc_{0.3}Ti_{1.7}(PO₄)₃] 131313-56-9, Lithium titanium yttrium phosphate (Li_{1.3}Ti_{1.7}Y_{0.3}(PO₄)₃) 131313-74-1, Gallium lithium titanium phosphate (Ga_{0.3}Li_{1.3}Ti_{1.7}(PO₄)₃) 131313-76-3, Indium lithium titanium phosphate (In_{0.3}Li_{1.3}Ti_{1.7}(PO₄)₃) 133138-74-6, Cerium lithium titanium phosphate (Ce_{0.3}Li_{1.3}Ti_{1.7}(PO₄)₃) 133139-17-0 133174-38-6, Lithium thallium titanium phosphate (Li_{1.3}Tl_{0.3}Ti_{1.7}(PO₄)₃) 133174-39-7, Lithium praseodymium titanium phosphate (Li_{1.3}Pr_{0.3}Ti_{1.7}(PO₄)₃)
(solid electrolyte of, lithium ion conductive, for battery and capacitor and display device)

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(FILE 'HOME' ENTERED AT 08:04:20 ON 17 SEP 2008)

FILE 'HCAPLUS' ENTERED AT 08:04:31 ON 17 SEP 2008

L1 1 SEA ABB=ON PLU=ON US20060216611/PN
SEL RN

FILE 'REGISTRY' ENTERED AT 08:05:39 ON 17 SEP 2008

L2 54 SEA ABB=ON PLU=ON (221273-01-4/BI OR 7440-21-3/BI OR
7440-57-5/BI OR 12190-79-3/BI OR 782495-23-2/BI OR
782495-24-3/BI OR 782495-25-4/BI OR 782495-26-5/BI OR
782495-27-6/BI OR 782495-28-7/BI OR 782495-29-8/BI OR
782495-30-1/BI OR 782495-31-2/BI OR 782495-32-3/BI OR
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782495-36-7/BI OR 782495-37-8/BI OR 782495-38-9/BI OR
782495-39-0/BI OR 782495-40-3/BI OR 782495-41-4/BI OR
782495-42-5/BI OR 782495-43-6/BI OR 782495-44-7/BI OR
782495-45-8/BI OR 782495-46-9/BI OR 782495-47-0/BI OR
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782495-57-2/BI OR 782495-58-3/BI OR 782495-59-4/BI OR
782495-60-7/BI OR 782495-61-8/BI OR 782495-62-9/BI OR
782495-63-0/BI OR 782495-64-1/BI OR 782495-65-2/BI OR
782495-66-3/BI OR 782495-67-4/BI OR 782495-69-6/BI OR
782495-70-9/BI OR 782495-72-1/BI OR 782495-74-3/BI OR
782495-76-5/BI)

L3 50 SEA ABB=ON PLU=ON L2 AND P/ELS

L4 24 SEA ABB=ON PLU=ON L3 NOT O4P

FILE 'HCAPLUS' ENTERED AT 08:06:46 ON 17 SEP 2008

L5 4 SEA ABB=ON PLU=ON L4

FILE 'REGISTRY' ENTERED AT 08:07:37 ON 17 SEP 2008

L6 3811 SEA ABB=ON PLU=ON (LI(L)P(L)O(L)(TI OR V OR CR OR MN OR
FE OR CO OR NI OR CU OR ZR OR NB OR MO OR RU OR AG OR TA
OR W OR PT OR AU))/ELS

L7 1802 SEA ABB=ON PLU=ON L6 NOT O4P

L8 23 SEA ABB=ON PLU=ON L7 AND L2

L9 1 SEA ABB=ON PLU=ON L4 NOT L8

L10 291 SEA ABB=ON PLU=ON L7 AND TIS/CI

FILE 'HCAPLUS' ENTERED AT 08:09:28 ON 17 SEP 2008

L11 165 SEA ABB=ON PLU=ON L10

L12 54 SEA ABB=ON PLU=ON L11 AND ?ELECTROLYT?

FILE 'REGISTRY' ENTERED AT 08:26:56 ON 17 SEP 2008

L13 53 SEA ABB=ON PLU=ON L10 AND 2-7/LI

L14 46 SEA ABB=ON PLU=ON L13 AND 3.5-8/O

L15 46 SEA ABB=ON PLU=ON L14 AND 0.01-1/M

L16 245 SEA ABB=ON PLU=ON L10 NOT L15

FILE 'HCAPLUS' ENTERED AT 08:31:40 ON 17 SEP 2008

L17 153 SEA ABB=ON PLU=ON L16

L18 49 SEA ABB=ON PLU=ON L17 AND ?ELECTROLYT?

L19 54 SEA ABB=ON PLU=ON L12 OR L18

L20 40 SEA ABB=ON PLU=ON L19 AND (1840-2003)/PRY,AY,PY

